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American Municipal Progress

CHAPTERS IN MUNICIPAL SOCIOLOGY

BY

CHARLES ZUEBLIN

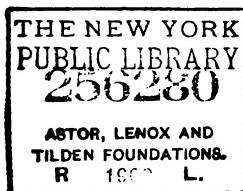
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CHAPTER I

INTRODUCTION—MUNICIPAL SOCIOLOGY

“THE rural exodus,” “urban needs,” “municipal activities,” “civic responsibility,” have become such trite phrases that their very familiarity bears reiterative testimony to the growing importance of city life and the peculiar problems presented by its organization. The rural problems are easily differentiated from the urban, but how shall we distinguish the various groups of problems of the great centres of population; which are urban, which are municipal, and which civic?

In the United States “city” is often used interchangeably with “municipality,” but a municipality is not necessarily identical with a city nor this with an urban centre. An urban centre or district has a psychological and industrial unity; a city has a legal and topographical unity; and a municipality has a functional unity. The urban district, determined chiefly by industrial conditions, is usually

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quite independent of politics; the municipality represents the organization for supplying communal needs and thus is defined by function; the city, in America, is the corporation chartered by the State for governing a populous geographical area. The common psychological distinction of the urban district is seen when a man abroad writes himself down as from Boston, though living in a remote suburb. He then recognizes a *quasi-allegiance* to the "city" which in his tax relationship he may not sustain.

The confusion in the popular mind is illustrated by the fact that the familiar characterizations of cities are the psychological designations of the urban district. The municipal or civic features are ignored when we speak of Cleveland or Savannah as the "Forest City," of Baltimore as the "Monumental City"; Pittsburg, the "Smoky City"; Chicago, the "Windy City"; Philadelphia, the "Quaker City"; Brooklyn, the "City of Churches"; Boston, "The Hub"; New York, "The Metropolis"; New Orleans, the "Crescent City"; Denver, the "Queen City of the Plains"; or Los Angeles, the "City of the Queen of the Angels." The confusion increases when there are large aggregates of population with collective rights and functions coextensive with neither the urban centre nor the city.

The differences between an urban district, a municipality, and a city may, perhaps, be indicated by some concrete illustrations. Greater New York

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is an attempt to unite an urban district, recognizing the intimate relations of the suburbs to the city proper; but Jersey City and Hoboken are as strictly organic parts of the urban community as is Brooklyn or Staten Island. Indeed, it may be a question whether the metropolitan district does not logically include all those populous areas of New Jersey, Long Island, Connecticut, and the Hudson region, which are tributary to New York.

The city of Chicago extends over a considerable area and comprehends much of its urban district; yet it excludes such organic parts of the urban centre as Evanston and other north-shore suburbs, and is quite distinct from a number of the municipal bodies, such as the sanitary district and the park commissions. The question arises also as to the natural relationship of the remoter independent communities like Hammond, Harvey, Joliet, Aurora, Elgin, and Waukegan, which are industrially a part of the urban district quite as truly as is Pullman, which lies within the boundaries of Chicago.

Greater Pittsburg presents similar conditions. Pittsburg proper has a population of 321,666; Allegheny has a population of 129,896; other communities which are equally integral parts of the urban district of Pittsburg swell the population to 700,000; more than twice as many as are included in the city of Pittsburg. Between these urban elements the only municipal bond is the railway system.

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Manchester, England, a city of more than half a million inhabitants, is municipally independent of its neighbor across the river, Salford, with over two hundred thousand inhabitants; while in addition to this compact population there is in the urban district of Manchester one of the largest aggregates of population in the world. Manchester is surrounded by industrial towns for which it is the commercial centre, and, since the construction of the Manchester ship canal, the port. Within thirty-five miles of the city hall of Manchester there is a larger population than within thirty-five miles of the Guildhall in London; although the municipality of London contains nearly ten times the population of Manchester.

The same peculiarities are exhibited by London. The ancient city government still rules over the central portion of the city area; beyond this, in addition to several governments now known as boroughs, the London County Council exercises jurisdiction over 118 square miles of the municipality proper. A still larger jurisdiction is exercised by the Metropolitan Police Board, to name no more of the independent bodies of London.

In the urban district of Boston there is a more logical organization of some functions. While the city of Boston includes only about one-half of the population of the natural urban district, Metropolitan Commissions control the water supply, sewage disposal, parks, and rapid transit; the area in each case forming a logical unit. These

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are evidently organizations for the performance of municipal functions ; yet they are not themselves coextensive, and they serve regions which in some of their occupations are rural. The urban district of Boston is greater in extent than the area covered by any metropolitan commission. These metropolitan commissions, which are unquestionably municipal, comprehend more than does the city of Boston, and their significance is functional and neither geographical nor psychological. If Boston is not a place, but a " state of mind," this does not apply to the district covered by the Metropolitan Sewerage Commission. Thus it would seem that popular usage indorses at least a distinction between municipal and urban, though the term "municipality" may still be ambiguous.

"The ancient city was a walled town and hence was easily distinguished from the rural districts. Similarly, in the middle ages the only places of collective residence were the enclosed towns which were absolutely cut off from the scanty population of the rest of the country. In such circumstances there could be but one distinction between city and country. This distinction, moreover, was recognized by law, which by royal charter conferred certain privileges upon the towns as compared with the open country. The basis of distinction was the pursuit of industry and commerce, *i.e.* the cities were manufacturing and market places."¹ The urban district is still bound by industrial ties;

¹ Weber, "Growth of Cities," p. 6.

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and while municipal functions have changed, they remain, in principle, the satisfaction of the common wants of the urban group, acting in their corporate capacity.

Sociology is the science of social phenomena. Social phenomena are those involved in the satisfaction of human wants. **MUNICIPAL SOCIOLOGY INVESTIGATES THE MEANS OF SATISFYING COMMUNAL WANTS THROUGH PUBLIC ACTIVITY**; thus not only delimiting a field of sociology, but qualifying it by functions known as municipal. Municipal sociology, therefore, does not deal with all urban problems, some of which may not be municipal; nor does it deal with all municipal problems, some of which may not be sociological. Municipal sociology treats of the public provision for the needs of the urban district, present and prospective. The limitations of the subject indicated above are those necessary to the preservation of a particular branch of sociology. Further restrictions are imposed by the province of this book as indicated by the title. Whatever unique political or sociological features we may find in American life are of interest to us here only so far as they find embodiment in municipal activity.

Among the arbitrary restrictions which may have a limited scientific defence is the exclusion from this treatment of the police and judicial departments, churches, charities, and institutions of vice, such as saloons and brothels.¹ The police,

¹This, however, does not contradict Mr. Maltbie, who says:

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in their protective capacity, undoubtedly play a large part in furthering the satisfaction of human wants, but they are for convenience here classed with the judiciary, which belongs in the province of political science rather than sociology. Charities, when not voluntary, are usually included in county organization; churches are *quasi*-public institutions because of their exemption from taxation, but they are in no sense municipal institutions; institutions of vice present, it is true, peculiar urban problems, which are, nevertheless, not municipal except so far as they contribute to municipal funds or need municipal supervision, in which cases they fall rather within the province of financial or police departments, which are excluded as belonging to the realms of economics and politics respectively. Administrative progress, in which noted advances have recently been made, is excluded by the conception of sociology. In spite of these restrictions, the limits of the subject are not accurately defined, and the moment we observe the great variety and extent of municipal

“It would seem wise, therefore, to include not only those functions which are performed by the local governments and which have to deal with urban conditions, but also those functions which are frequently performed by municipal authorities as agents of the State. An additional reason for the adoption of this plan is the fact that not infrequently special authorities, besides the true municipality, have been created for special purposes and endowed with large powers relating to special subjects, as park trustees, etc.” (Maltbie, “Municipal Functions,” pp. 40, 41.) The restrictions suggested above are not intended to imply that there is any ultimate limit to legitimate municipal functions.

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progress in the United States we find it impossible to be comprehensive. While typical instances of most of the forms of *American municipal progress* may be mentioned, a fairly complete summary being given of those activities for which data are obtainable, it seems best to define the subject also as *Chapters in Municipal Sociology*.

It is obviously difficult, if not impossible, in such an inquiry to observe the three requirements declared by Mr. and Mrs. Webb to be essential to accurate sociological investigation: "The document, personal observation, and the interview."¹ There are geographical limitations to personal observation; public documents lack comprehensiveness and uniformity; and interviews with municipal officials, while indispensable, are often little more reliable than Mr. and Mrs. Webb found to be the testimony of the trade-union officials. Many American public officials are well informed in regard to their special departments who are quite ignorant of other branches of municipal activity. It must be frankly admitted, then, that the data presented are in some cases simply such as were available, but it is believed that the most notable instances of American municipal progress are recorded.

The student will find the most valuable and comprehensive collections of facts in Frank Parsons's "The City for the People," John A. Fairlie's

¹ Webb, "Industrial Democracy," 1st ed., Vol. I, p. xi (Longmans, Green & Company).

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"Municipal Administration," and Milo Roy Maltbie's "Municipal Functions." References to the literature of the subject will be found in the "Bibliography of Municipal Problems and Conditions," by Robert C. Brooks. These publications are invaluable to the student of municipal sociology, but in summarizing the experience of cities in all parts of the world, the authors necessarily give but scant treatment to American cities. The Bulletin of the Department of Labor for September, 1901, contains Carroll D. Wright's summary of municipal statistics for cities of thirty thousand inhabitants and over.¹

¹The Commissioner of Labor is authorized to compile and publish annually, as part of the Bulletin of the Department of Labor, an abstract of the main features of the official statistics of cities of the United States having over thirty thousand population.

The titles of the twenty-three tables embraced in the investigation are as follows:—

- I. Incorporation, population, and area.
- II. Period covered, etc.
- III. Police, retail liquor saloons, and arrests, by causes.
- IV. Firemen, fire equipment, loss by fires.
- V. Marriages and births.
- VI. Deaths, by causes.
- VII. Percentage of deaths from specific causes.
- VIII. Death rate per 1000 population.
- IX. Death rate per 1000, by causes.
- X. Area of public parks, and miles of streets, sewers and street mileage.
- XI. Care of streets, disposal of garbage, and food and sanitary inspection.
- XII. Number and kind of street lights.
- XIII. Public schools and libraries.
- XIV. Charities, almshouses, charitable homes, etc., orphan asylums and hospitals.
- XV. Cost of water, gas, electric light and power plants owned and operated by the cities.
- XVI. Debt and legal borrowing limit.
- XVII. Basis of assessment, assessed valuation of property, and taxation.
- XVIII. Income from all sources.
- XIX. Expenditures for construction and other capital outlay.
- XX. Expenditures for maintenance and operation.
- XXI. Summary of income and ex-

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With some of the statistics the student of sociology has little concern. There are many other facts, however, which he ought to possess, and which he can secure only by the methods suggested above,—the document, personal observation, and the interview. In addition to the specific examples of unusual excellence in municipal activity, as complete data as possible for each city would be sought in the following subjects:¹—

Is there one street railway system, or are there several companies? For what time and on what terms are railway franchises given? What is the fare, and are transfers issued? What is the motive power? Are poles universally in evidence? Is the railway responsible for paving and cleaning any portion of the street? Is the service good,

penditures. XXII. Assets. XXIII. Per capita debt, assessed valuation of property, and expenditures for maintenance.

¹ In order to supplement the data furnished by Carroll D. Wright, blanks were sent out to cities having over thirty thousand population. Very few of these cities have departments of statistics,—the most noteworthy organization of this kind is in Boston,—and the blank returned from there is reproduced in Appendix I., where it is compared with excellent returns from St. Louis, the city nearest in size. Many of the cities did not reply; due partly, no doubt, to the same cause which made the replies of others unsatisfactory,—the absence of any adequate record in the city hall. In the case of one of the chief cities of the country the blank had been sent by the mayor to the department of vital statistics, whose representative apologized for the fact that these were the only statistics kept by the city. As an example of some of the comparisons made by public officials in the absence of adequate governmental statistics, a report prepared by the Commissioner of Public Works, Chicago, is given in Appendix II.

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bad, or indifferent? What are the revenues on which municipal officials might compute just compensation or fares? Do the steam railways enter the city by grade crossings, and are their stations conveniently located and ample provisions made for the additional crowding of the streets caused by them? Does the city have bridges, and if so, are they free?

Does the city own the gas works, electric light and power plant, water works, and markets? What are the charges in each of these services, and in case of private ownership what privileges does the city enjoy? In case of public ownership, is the undertaking remunerative, and is the debt being wiped out so that there will be an unencumbered municipal asset? In the case of the water works, what is the source of the water? and is it pure, or is filtration necessary? What is the per capita consumption, and is it regulated by meters? To what extent do telegraph and telephone companies use the streets? Are poles universal, or are conduits being introduced? What benefit does the city derive from the franchises?

What is the character of the street paving, and how much of each material has been used? What is the mileage of paved streets? How many miles of streets are cleaned daily, and at what cost? Is the street cleaning effective and economical, and is any use made of the refuse? Such questions would also apply to garbage disposal.

How extensive and efficient is the fire depart-

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ment? What is its cost to the city? Is it operated under a thorough civil service organization? The same information will be sought with regard to the police department, building inspectors, and the board of health.

Is there a complete system of sewage disposal, or to what extent has a beginning been made toward the establishment of such a system? Is there one outfall or are there many? What is the destination of the sewage? Is any use made of the valuable organic materials in it? Does the city water supply suffer from the sewage of other cities, or does it in turn pollute other supplies? Are there any public cemeteries or crematories?

What per cent of children of school age are in attendance in the public schools? What per cent reach the high school? Is manual training taught in the grades or high schools, or both? Is commercial instruction given? What is the nature of the art instruction? Is art in evidence in the school buildings or decorations? How are the school board and teachers chosen? What is the per capita expense per annum? Is there a night school, or are free lectures given? Is the kindergarten a part of the public school system? Do all of the schools have playgrounds? Do any of the schools have baths, or a gymnasium? Are text-books furnished free by the school board? Are the school buildings used by the public?

Is there any public library for loan or reference? Was the library created by public or private en-

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dowment, and is it maintained at public expense? How many volumes are there, and how many were circulated last year? Are the books accessible on open shelves? Are there branch libraries in the schools or elsewhere? Is there a museum or an art gallery, due either to public or private endowment?

What is the character of the public buildings and monuments? What was their original cost, and what is the cost of maintenance?

What is the nature and extent of the park system? What is the proportion of large and small parks, and what is the total acreage? Are they distributed so as to meet the needs of the whole population? Are they natural? Are they within the city or of a rural character like the metropolitan park reservations of Boston? Do the park authorities perform all public services, or are concessions let to private parties? Is there a boulevard system, and are the parks united by it? Is provision made in the parks for young children, and are there additional playgrounds in the community, independent of the schools?

Are there any public baths? What was their cost, and what charges, if any, are made? Are they available all the year, or only in the summer? Is provision made for shower, tub, or swimming baths? What other recreative institutions does the city possess?

Municipal sociology may suggest functions not yet undertaken; it may even devise new ones;

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but it must first make a comparison of existing activities and methods. If we consider the experience of the chief cities of to-day, we can choose from their successful municipal undertakings examples which would enable us to construct a composite city and while unsatisfactory as an ultimate goal, it might furnish a convenient working ideal for the contemporary city. If we were even to ignore the richer municipal experience of European cities, we could still construct a high ideal by observing the chief accomplishments of American cities.

This composite city would in the first place give due recognition to geography and topography. All cities owe much to these features, and the artificial development of some cities has resulted in an uneconomical use of them. Geography decides the city's commercial significance; nowhere do we find a better example than in Chicago; located where the watershed divides the drainage area of the Great Lakes from the basin of the Mississippi and at the particular point where the Great Lakes once drained through the Chicago River into the Mississippi, and yet in the sweep of the land transportation from the East to the West. Topography should determine the location and character of the business and residence districts; as in New York we find business thoroughfares stretching along the backbone of Manhattan Island, and the desirable residence districts on the heights or beyond the water boundaries of commercial New

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York ; with the noticeable exception of the large area, naturally convenient for the business district but undesirable for residence property, at present occupied by the East Side slums. Topography should also determine the plan of the city's streets, as occasionally it does, giving such diversity throughout the city as Minneapolis enjoys. Boulevards and parks should also be consistent with the topography, and Boston has shown that they can be. It is further possible to recognize topographical advantages in the location of public buildings, wherein Washington provides our chief example.

Both the commercial and æsthetic character of the city are governed chiefly by its location : on the sea, as is San Francisco ; or on a river, as Detroit ; among the hills, as Pittsburg ; or in the plains, as Indianapolis. It will then be beautiful when natural ; it will be rich because of the possession of natural advantages. These natural advantages will also govern its transportation facilities, which should in turn conform to the plan of the city, as we find again in Washington. Dignified approaches to the city may be found in its docks, as in Philadelphia ; or its bridges, New York being the only river town which has used its beautiful natural approach so as to possess a bridge spanning the waterway, as a dignified city entrance. The chief means of approach to the American cities are the railway stations, and a great union railway station with a spacious plaza may be a

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worthy ornament as well as of great utility to the city ; we have a choice of several examples, the most notable probably being Providence.

The streets of this composite city would be broad like those of Washington (their direction being governed by the conformation of the land and the convenience of the citizens); they would be well paved and cleaned as Colonel Waring made those of Manhattan in contrast with those of Brooklyn ; they would be lined with trees, as New Haven and many smaller cities show they can be; they would be free from telegraph, telephone, and trolley poles, of which Manhattan is again our chief if not sole instance; they would be as well lighted as those of Philadelphia, adorned by well-planned buildings, of which examples can be found to-day only in a few streets of some of our larger cities, such as Fifth Avenue, New York, and the Lake Shore Drive in Chicago. Beneath the streets would be found such complete drainage and sewerage systems as Boston is endeavoring to secure; conduits for all necessary wires and pipes, such as one finds in Chicago ; and for heating, such as private enterprise provides in Cedar Rapids, Iowa, Evanston and De Kalb, Illinois. There would be a comprehensive sewerage system, as found in Pasadena, California, and method of garbage disposal, as in Cleveland.

The public water supply would include special provision for fire protection, like the fire-boat and pipe-line system of Milwaukee ; for fountains, as

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illustrated by those in Washington ; for street and sewer flushing, which Paris provides ; for public baths and swimming pools, like those of Boston ; for public laundries, which one finds in London ; and for public comfort stations, as in New York. To these safeguards to the health of the community might be added a system of public markets, such as one finds in Baltimore and New Orleans ; a thorough system of food inspection, such as is being developed in Ohio cities ; public regulation of burial, which we find in Munich and other European cities.

One of the most pressing urban problems which may receive municipal attention is that of the housing of the population, undertaken by the public authorities in many British cities for purposes of health, morals, aesthetics, and the appropriation of some of the unearned increment, as most successfully exemplified by Birmingham. The beginnings of the rehousing system are in evidence in Boston, New York, and Washington, the most advanced step being the organization of the Tenement House Department of New York.

The public school buildings naturally form the chief architectural adornments of the city, well illustrated by Duluth. They should be located in the midst of lawns and trees, following the example of Andover and many other small cities, with provisions for playgrounds, as secured by the New York law ; with swimming pools, such as one sees in Glasgow ; or bathing facilities like those of the

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Paul Revere School in Boston. The curriculum would include, in addition to the literary and scientific branches, kindergarten, manual training, technical and art instruction, as exemplified in St. Paul; trade instruction, which is furnished in Lowell; and commercial preparation, such as is provided in the Pittsburg and Philadelphia high schools. To these improvements would be added a weekly excursion, which is an integral part of the German system; daily luncheon, which may be had in the high schools of Washington and Milwaukee; gymnasiums, laboratories, workshops, and play rooms, as provided in New York; the use of libraries, as found in Cleveland; assembly halls for education or recreation, which New York is also furnishing; free lectures for adults, comparable to the unique New York system; truant schools like those of Boston; and special provision for defective children, an illustration of which is found in the Chicago schools for the deaf. The community could provide public libraries, of which Boston and Chicago are the chief examples; scientific museums, like the Academy of Natural History in New York; and art galleries such as Philadelphia maintains. These should be accessible to the whole population and the collections housed appropriately.

Worthy evidences of civic pride are public buildings, sculpture, and monuments; not only independently beautiful, but effectively grouped, as has been attempted in Washington and is being more

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systematically undertaken by the present commission. Independent examples of special note are the Appellate Court Building of New York, with its elaborate mural decorations; St. Gaudens's statue of Lincoln in Chicago; the Shaw Memorial in Boston; the Washington Monument in Baltimore; and the Farragut Fountain in New York. The public architecture as well as the other buildings and the streets of the city would be controlled by an architectural commission, as in Paris; and of course the buildings should be erected within their appropriations, as exemplified by the Congressional Library in Washington.

The parks and boulevards of the city would be ample, as those of Boston are; would conform to the topography, as do those of Toledo; would be available to the whole population, as are those of Washington; and would include central squares and parks about the chief public buildings, as illustrated in New York; parks and playgrounds about the school buildings, like those of Menomonie, Wisconsin; parks in the outlying suburban districts, such as those of Los Angeles and Philadelphia; and rural parks in their natural state easily reached by the municipal transportation service, as is true of some of the reservations of the Boston metropolitan district. Such are some of the elements in a composite municipality drawn chiefly from American experience.

These possibilities manifestly make some demand upon the imagination which may prove

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bewildering to the hard-headed citizen. The spasmodic advance of to-day is due largely to the occasional triumph of the imaginative official or public-spirited citizen over his short-sighted associates. A comprehensive improvement can be expected only when idealism becomes infectious. Our most poetic naturalist says, " You must have the bird in the heart before you can see it in the bush." Sylvester Baxter's dream in Boston, ten years ago, of the great metropolitan organization, which has been more than realized, proves that "all things are possible to him that believeth." Municipal progress will be quickened when the growth of the communal spirit makes the conception of the composite city possible to a larger citizenship.

CHAPTER II

TRANSPORTATION

THE first municipal problem is that of transportation. The commercial cities of old were on the great trade routes, and formed the point of transfer from water to land or from one highway to another. The great natural means of transportation—the sea, lakes, rivers—still determine the situation of many of the chief cities, although the artificial devices, such as railways, located almost at will, assume a more commanding position in relation to modern communities than did the highways of the past. While the means of transportation have been multiplying, they have also become more conspicuous and assertive, requiring more space in the cities to or through which they run, employing more of the inhabitants, absorbing more of the capital, often determining both industry and politics, menacing human life, and marring the city's appearance.

The first problem of municipal transportation is to obtain access to the city. A union of the æsthetic principles of the ancients and the engineering knowledge of to-day would give the cities great railway stations, furnishing commanding en-

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trances, the old gates of the walled city stated in terms of twentieth century massiveness and method, having adequate approaches on the side of both the railway and the city, and thus eliminating the familiar but deadly grade crossing and the usually ugly and mean streets leading to the typical station. Few American cities achieve the dignity, convenience, or safety of such a railway entrance. New York City has its Grand Central Station, approached chiefly by underground and elevated tracks, but, providing thus for railways coming in but one direction, and having a railway yard which rivals the narrow streets leading to the station in insufficiency, it makes of New York one of the most inadequately equipped cities of the country. The horrible tragedy of January, 1902, is not surprising to the regular patrons of this insignificant subterranean entrance to the metropolis. The boldly conceived plans for the Pennsylvania and Long Island Railways to reach the city by tunnelling under two rivers, and the proposed entrance to the city by the Philadelphia and New York trolley system, give promise of considerable improvements.

Philadelphia has two stations in the heart of the city, which are reached by elevated and underground systems, to be described later, and has the most satisfactory provision among all the metropolitan cities of the country. Its chief rival among the greater cities is St. Louis, while the much smaller city of Providence, Rhode Island, surpasses them

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both. The new Union Railway Station of Providence is almost ideal in plan if not in architecture, the great plaza in front of the station giving abundant room for all kinds of traffic, relieved as it is by some of the surface systems passing under the railway station. It also presents a very imposing appearance, as is appropriate to this great modern gateway to the city, the formal treatment of the foreground on the side of its chief approach being enhanced by the magnificent background formed by the State Capitol.

The St. Louis Union Station is among the most noted of the country. The approach of the tracks in St. Louis is partially overhead by fourteen viaducts, but with a number of crossings at grade, and yet St. Louis holds the palm among the larger American cities in the small number of grade-crossing accidents. In spite of the monumental character of the St. Louis Union Station, both the railway yards and the streets leading to the station are totally inadequate, and the general provisions for the city are inferior to those of Boston, where the South Union Station is nearly as large and quite as bewildering in the multiplicity of its conveniences as that of St. Louis. The coördination of the railway systems of Boston, though not uniting them in one station, secures the coöperation of steam railways, surface, underground, and elevated systems, with a completeness which is unique in this country.

Baltimore, in contrast with its neighbor Wash-

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ington, has conveniently located railway stations with good approaches, the tracks being chiefly underground, and the formal landscape treatment of the grounds about the stations makes them among the most attractive in the larger cities. Washington, on the contrary, has a network of grade crossings, some of them disfiguring its chief topographical and architectural attractions most objectionably, the chief instances being where the railways cross the Mall. The latest information from Washington is to the effect that the Pennsylvania Railway, which it was feared, by the elevation of its tracks, would furnish an added disfigurement to the city, has acquiesced in an arrangement to locate a union station north of the present Baltimore and Ohio depot, which will entirely remove steam railway tracks from the Mall. The Southern and the Chesapeake and Ohio railways will enter by a tunnel between the Capitol and the Library of Congress, and the new union station, with its marble façade overlooking a great plaza, will undoubtedly be the finest in the world. The only question which remains to be decided is as to whether it shall be publicly or privately owned.

The Pennsylvania Railway, which began the elimination of grade crossings in preparation for the Centennial in Philadelphia, has elevated its tracks in Jersey City, where a good station and connecting ferry systems are located, and is now engaged in the work of track elevation, in places as remote as Newark, New Jersey, Tyrone and Chester, Penn-

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sylvania. The difficult and important work of track elevation nearing completion in Pittsburg adds to the accomplishments of this railway. The rapidly growing population of this great urban centre and the important trunk lines which converge here increase the significance of this belated enterprise. Even this much needed improvement, which includes one of the most imposing railway entrances of the country, illustrates the penny-wise and pound-foolish methods of the chief modern corporations. The passenger accommodations of the station are a very little greater than in the case of the old building, and are already insufficient before the workmen have cleared away the refuse of construction. An extension of the station over the Panhandle tracks would have given ample space, whereas now they are proposing to put the dining room in the second story to increase the size of the main waiting-room. Pittsburg enjoys the advantage of protection from the location of the Baltimore and Ohio and Pittsburg and Lake Erie tracks on its river front, but these serve to disfigure the river banks without furnishing any means of coördination with the shipping system.

Columbus, Ohio, has made improvements of recent years which give to its union railway station an unusual importance for a city of its size. The grade crossings in the neighborhood of the station are now entirely removed by the apparent depression of the tracks, due to the raising of the level of all this part of the city, so that instead of ugly

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viaducts causing a depreciation of all the surrounding property, with other attendant inconveniences, the streets have all been improved, and when the district is entirely rebuilt, all evidences of the railway will be removed.

The city of Milwaukee has excellent approaches to its railway stations, but is still afflicted with a large number of dangerous grade crossings.¹

The union stations of St. Paul and Toledo are excellent examples of the incapacity of certain railway officials to see beyond the fiscal year. In Toledo the inadequate union station is badly located, being remote from the other railway stations of the city as well as from the business centre. The union station of St. Paul, located appropriately enough on the river bank, is seriously cramped, its railway yards are continually congested, the street approaches are altogether insufficient, and the present effort to appropriate a part of the river by taking advantage of the stupidity of public officials, will give only temporary relief, as has the effort to enlarge the station,

¹ Among the important cities of the country in which no effective effort has been made toward coördination or the elimination of grade crossings are Cincinnati, Cleveland, Buffalo, Detroit, Minneapolis, Louisville, New Haven, Cambridge, and Grand Rapids, while the small city of Spokane, Washington, has half its crossings overhead. The efforts of Buffalo to secure a union station seem to be blocked by the short-sighted greed of the New York Central officials. Cities having union stations which are entirely inadequate and still maintaining dangerous crossings are St. Paul, Kansas City, Indianapolis, Syracuse, Toledo, and Dayton.

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made a few years ago. The enlargement of this St. Paul station, like that at Pittsburg, did not serve the convenience of the companies or the public for as long a period as they were discommoded by its reconstruction.

The city of Indianapolis has a conveniently located union station, which is used by all the roads entering the city, but it is reached by a large number of dangerous grade crossings. Individuals and bodies of citizens have approached the companies with a view to securing track elevation, but without success. The officials of the city have estimated that the entire elevation of tracks, including the raising of the union station, would cost only two million dollars. The Chicago superintendent of track elevation made a personal investigation of conditions, and reported that the work could be done for \$125,000 a mile, and there are only three miles of track to be elevated. The remainder of the cost would be apportioned to the alteration of the union station; which would be of advantage to the companies, not only by the speed gained on the elevated tracks and the absence of damage suits, but by the enlargement of the railway station, which has begun to be overtaxed. When the city engineer tried to open one of the streets forty feet wide, crossing the tracks of one of the roads, a few years ago, the damages claimed by the road which owns the right of way were about \$12,000. This would indicate the railway's own estimate of the advantage of having a

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clear right of way. The city engineer has counted on one day's freight and passenger trains, cuts and shifts, numbering 840. The obstinacy of the railroads, as is repeatedly the case, works to their disadvantage as well as to that of the community.

The little city of Moline, Illinois, which under ordinary conditions could scarcely have the influence to secure track elevation, threw away an opportunity at one time, which is significant enough to be recorded. In the improvement of the streets in the down-town district it was essential to alter the datum. In order to reach the grade of the railroad tracks it was necessary to lower the street level from four to six feet. An elevation of only a little greater extent would have put the railroad tracks above the streets for all time and removed dangerous and congested grade crossings. It is probable that the subject of track elevation was not even considered there, but it often is a matter of great concern to smaller cities, which are powerless in the face of railway threats.

The city of Joliet, Illinois, which is honeycombed with railroad tracks, has had so many dangerous accidents, and suffers such constant inconvenience by the number of these tracks and lack of any system, that it has made repeated efforts to secure the removal of grade crossings. The railways, however, threaten to leave the city in case the matter is pressed, and the people who are dependent upon the local industries, failing to realize their own importance to the railways, submit.

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The report of the Rapid Transit Commission of the Massachusetts Legislature, under the acts of 1891, presents the most detailed investigation of transportation facilities ever made in this country. The inquiry included all the street railways as well as the steam railroads serving the community. The metropolitan district under investigation comprised a ten-mile radius from the city hall, within which were found eight hundred and fifty thousand persons in twenty-seven municipalities.¹

The result of this report was a transformation of the railway facilities of the district which included the enlargement and alteration of draw-

¹ According to the report, "One hundred years ago Boston contained eighteen hundred people, and its narrow lanes wound in and out among its hills as individual fancy or the configuration of the ground dictated. The ten-mile circle around it may have held half as many more who carried on what little traffic existed with the town over a single highway along the Neck or across the water in boats. Fifty years later the same territory which originally constituted old Boston, boasted a population of nearly one hundred thousand, and within a radius of ten miles from the Old State House clustered one hundred and seventy thousand inhabitants. To-day the territory which we term the Metropolitan District holds eight hundred and fifty thousand souls. In the year ending September 30, 1871, the steam railroads brought into and carried out of Boston seventeen million passengers. In the year which closed June 30, 1891, the volume had swollen to fifty-one millions. The travel had doubled in ten years. Similar extracts from the street railway statistics show that in the year 1871 the street railways within the ten-mile limit carried thirty-four millions. In 1881 the numbers rose to sixty-eight millions, and in 1891 they reached the grand total of one hundred and thirty-six millions. In other words, the traffic doubles in each decade." (Report of the Rapid Transit Commission of the Massachusetts Legislature, 1892, p. 7.)

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bridges (necessitating the coöperation of the federal government), the abolition of grade crossings, the coöperation of the railways in the use of two union railway stations, one on the north and one on the south side of the city, with special provisions for the handling of passenger traffic, freight and teams, involving thus the widening of the streets, the enlargement of the railway yards, and the improvement of dock facilities.¹

The most extensive work in the elimination of grade crossings in the United States has taken place in the last ten years in Chicago. Between May 23, 1892, and December 31, 1899, nearly three hundred miles of track were elevated in Chicago, and two hundred miles more have been provided for by ordinance, a considerable portion of which is in process of elevation. The largest railway centre in the country has had the most imperfect facilities of any city in the world. The inconvenience of lack of coördination is quite as evident in New York, but it is not so dangerous as in Chicago. Census Bulletin 83 indicates that the deaths due to grade crossings in Chicago are considerably more than in any other city in the country, more in fact than the total of the seven cities next in size.²

¹ A Massachusetts law now requires the gradual abolition of grade crossings.

² Mr. Ethelbert Stewart of the Federal Labor Bureau gives the following table for the year 1899: —

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In addition to the menace of these bad facilities, is the lamentable fact that with the abolition of grade-crossings the railway systems of the city will still remain without unity. London has its underground railway system, Paris its *chemin de fer de ceinture*, and Berlin its Ringbahn. The only possibility of uniting the railway systems of Chicago, on account of the city's peculiar topography, is by an underground belt line. However, in spite of these difficulties and the persistence of Chicago's bad reputation as a death centre, the improvements due to the track elevation are most significant. These began in preparation for the World's Fair with the elevation of the Illinois Central tracks, which pass for a considerable distance along the Lake Shore, and then run through populous residential districts. The exceptional advantages possessed by the Illi-

DEATHS FROM RAILROAD ACCIDENTS

CITY	POPULATION	MALES	FEMALES	TOTALS
New York	3,437,202	113	11	124
Philadelphia	1,293,697	50	5	55
St. Louis	575,238	8	1	9
Boston	560,892	50	2	52
Baltimore	508,957	31	6	37
Cleveland	381,768	61	7	68
Buffalo	352,219	55	4	59
San Francisco	342,782	22	4	26
Cincinnati	325,902	52	4	56
	7,778,657	442	44	486
Chicago	1,698,575	304	26	330

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nois Central Railway as the one company with direct access to the World's Fair grounds made it possible for the city to compel the elevation of its tracks. Twenty-eight miles of all tracks were elevated with the elimination of thirteen grade crossing at a cost of \$2,000,000. This work was projected in May, 1892, and completed in time for the World's Fair.

The next important piece of elevation was provided for by ordinance in July, 1894, to raise the tracks of the Lake Shore and Michigan Southern Railway Company, and the Chicago, Rock Island, and Pacific Railway Company. Forty-three grade crossings were eliminated and sixty miles of track were elevated, at a cost of \$3,000,000. One group of subways at Sixty-third and State streets are the longest in the United States, the subway at Sixty-third Street being 940 feet on the floor between portals, and that at State Street 640 feet.

Then followed in succession the elevation of certain portions of the tracks of a number of other railways.¹ Some of these projects required the application of exceptional engineering skill, owing to the planless method of approaching the city. At Sixteenth and Clark streets one of the most dan-

¹ The Chicago and Northwestern Railway, the Pittsburg, Ft. Wayne and Chicago Railway, the St. Charles Air Line, the Chicago, Burlington, and Quincy Railroad Company, the Chicago, Milwaukee, and St. Paul, the Chicago and Alton, and other companies.

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gerous grade crossings was eliminated, with equal gains to the railways and the city. At this point the different lines of railway crossed each other and the street at three different angles. The result of the improvement has been that the railways now cross each other at grade at one crossing, while some of the tracks are depressed under others, and the street, paralleling one system of tracks, passes over a second and under the third. This complicated problem, involving the elevation of less than a mile of first main track in any direction, cost the combined companies \$2,000,000. The table given in the Appendix¹ will indicate the extent of the work already accomplished in Chicago, one of the most notable features being that the \$17,500,000 already expended and the millions which will still be required to complete this gigantic enterprise are all assessed upon the railway companies, the only cost borne by the city being that occasionally involved in the alteration of its streets. This vast undertaking, which has been aided by several Chicago mayors and councils, owes its inauguration and establishment largely to the efforts of the present superintendent, Hon. John O'Neill, who is known in Chicago as the "father of track elevation."²

Aside from the immense saving to human life, one of the great gains to the community has been

¹ See Appendix III.

² Report of Chicago Track Elevation, 1901.

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the time saved on suburban lines by virtue of these improvements. In this the railway companies have been equally the gainers in increased traffic and receipts, by which they are learning the economy of track elevation. From five to twenty minutes are now saved in suburban railway journeys over the lines which are elevated. The Chicago, Burlington, and Quincy trains run to Aurora, thirty-nine miles, in forty-five minutes, the Chicago, Rock Island, and Pacific trains to Joliet, forty-one miles, in fifty minutes, while the Erie and Monon railways require one hour to go to Hammond, twenty miles, and the Baltimore and Ohio Railway fifty minutes to South Chicago, the same distance.

Next to this work in Chicago the most important is doubtless that done in Philadelphia. The first track elevation there was also necessitated by a large exposition, the Centennial, in 1876, when the Pennsylvania Railway undertook to penetrate to the heart of the city from West Philadelphia by a substantial elevated structure. This was followed some years later by the Philadelphia and Reading Railway carrying its lines to an equally central position, still later by the Baltimore and Ohio Railway tunnelling the city for a considerable distance, and more recently by the subway constructed by the city and the Philadelphia and Reading Railway Company, from the location of the old station at Broad and Callowhill streets west to Fairmount Park.

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The significance of this depression of tracks is best appreciated by noting that the connection which it is desired to make between the subway and the main line of the Philadelphia and Reading Railway requires that trains should pass from the subway to an elevated structure within a space of two city squares. This was done partly to provide a wide street, which should furnish the magnificent transformation of a railway yard into a boulevard, and partly to avoid having elevated tracks pass over Broad Street, the great central avenue of the city. The cost of this work, including damages to property, approximated six million dollars, which was divided equally between the railway company and the city.¹

The engineering difficulties were considerable, as the subway involved reconstruction of the sewer and water-pipe system crossing it, and it was

¹ The work of abolishing all grade crossings on the line of Pennsylvania Avenue from Thirteenth to Thirtieth streets by depressing the tracks of the Philadelphia and Reading Railway Company, commonly known as the Pennsylvania Avenue Subway, was authorized by Ordinance of Councils, approved March 17, 1894.

The elevated structure which extends from Callowhill Street, between Eleventh and Twelfth streets to Thirteenth and Noble streets, is 959 feet in length. The subway from Thirteenth Street to a point east of Twenty-second Street is 4180 feet in length. The tunnel has a length of 2711 feet, and the open subway to the westward is 2150 feet long, terminating at Thirtieth Street. The total length of the work is therefore about 10,000 feet, or nearly two miles. Throughout the subway and tunnel from Broad Street there are four main tracks. In addition to these are the side tracks and tracks in the yards at Broad Street and at Twentieth Street.

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necessary to continue the traffic of the railway without interruption. This was done by the gradual construction of the tunnel and subway, permitting the use of certain tracks, and finally by the transfer of the tracks to the neighboring street. Not the least of the difficulties involved, necessitating the overcoming of some opposition, was the adequate provision of switching tracks to the manufacturing concerns which line Pennsylvania Avenue. From the beginning of the tunnel the street has been boulevarded, with openings for ventilation at intervals surrounded by a rustic masonry wall, on which vines have been planted, and around this wall is a grass plat six feet wide, in which appropriate shrubs are planted, making an ornament to the driveway while furnishing a convenience to the tunnel. The avenue is 120 feet in width, with sidewalks twenty feet wide, having six feet of sod and also planted with selected trees. As the avenue approaches Fairmount Park it widens into a plaza opposite the Green Street entrance, where the Washington Monument is located. To old Philadelphians this is one of the most remarkable improvements of the city, because what was once an unsightly railroad yard is now a spacious boulevard. For many years there was an intense opposition in Philadelphia to providing an appropriate roadway to Fairmount Park, this earliest of American large parks being without any adequate approach. The feeling that a boulevard

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was an aristocratic device has weakened in the face of the bicycle and other democratic means of conveyance, and there is no less appreciation shown to-day for the beauty than for the convenience of the new Pennsylvania Avenue. At the same time Broad Street, which has thus been preserved as a great unobstructed artery, remains the pride of the city. In view of the unenviable, and unfortunately justifiable, reputation which Philadelphia enjoys as the most corrupt city in the country, it seems especially desirable to recognize the efficient service of the Bureau of Surveys, which has carried to successful completion this great engineering project, under the leadership of Mr. George S. Webster, the chief engineer.

The scientific and harmonious treatment of transportation will lead to the differentiation of seaports, river towns, and railway centres. The transportation facilities should be subordinate to, though conditioned by, the topographical features, and the plan of the modern city must be considered as a whole if the best economic and æsthetic results are to be secured. The union railway station, the docks or ferries, will then form an organic part of the city. Unsatisfactory as are the terminal facilities of the railways of the country, the other approaches to the city have actually been treated with even less dignity and discrimination. The ferries and docks are commonly as ugly and inadequate as the country roads which lead to the city. Philadelphia and New York

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have been making important improvements lately, prophetic perhaps of the day when our great cities shall rival the minor cities of the Old World in the provision of such public works. Within the last thirty years New York has undertaken important schemes of dock construction. Almost \$30,000,000 have been expended since 1870. The total value of dock property owned by the city is registered in the Departments of Taxes and Assessments as \$38,000,000, as compared with less than half that sum accredited to individuals and private corporations, in each case being about one-third of the actual value.

Among the most important recent improvements on the water front of American cities is that which Philadelphia carried to completion in 1896 in the widening of Delaware Avenue. An improvement valued at over \$2,000,000 was accomplished by the coöperation of the city of Philadelphia with the trustees of the fund created by Stephen Girard for Delaware Avenue improvements. Between Vine and South streets an avenue fifty feet wide was enlarged to a width of 150 feet, by reclaiming a strip of one hundred feet in width from the river, involving the deepening of the stream, and the building of substantial bulkheads on an insecure foundation of from ten to forty feet of mud. In Philadelphia, however, the improvidence of the past has reduced the dock income to a small sum, while Chicago and other lake cities receive so little revenue that it is virtually

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negligible. Many river cities own all of their docks.¹ St. Louis receives an annual revenue of \$64,000 from this source, and New Orleans \$40,000.

The approach to cities located on waterways is made by ferries, bridges, and tunnels. Boston owns an unremunerative ferry system; New York receives quite a little revenue from its ferry privileges, which are leased for definite periods to private corporations; Chicago furnishes an occasional free ferry when a bridge is being repaired, a process which sometimes requires years. New York is the only American city which has a dignified entrance by a bridge, but the majestic Brooklyn bridge which embellishes the landscape of the East River is to have a rival soon which will go far toward making that famous stream as ugly as the others in this country.

An interesting comparison may be made between the Brooklyn bridge and the Eades bridge at St. Louis. The latter cost \$10,000,000, has a total length of 6210 feet, including three steel spans, respectively 502, 520, and 502 feet long, and has a height of 55 feet above water; while the East River bridge cost \$15,000,000, is 5990 feet long, the distance between the piers is 1600 feet, the height above water is 135 feet. The charges for vehicles on the Brooklyn bridge are one-fifth those

¹ *E.g.*, St. Louis, New Orleans, Pittsburg, Allegheny, Louisville, Memphis, St. Paul, and Nashville (Maltbie, "Municipal Functions," p. 165).

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on the St. Louis bridge, and foot passengers are charged nothing, as compared with a five-cent charge on the other. So much for public enterprise! The Brooklyn bridge, which was begun in 1870 and completed in 1883, long ago had the capacity of its four street railway tracks, two carriage ways, and great raised footway overtaxed by the fifty million people who cross it annually. The second East River bridge is now nearing completion, a third is projected, and not only will these be inadequate, but Mr. Bird S. Coler and others have proved that tunnels are superior and cheaper.¹ The original cost is about one-third that of bridges, and the cost of maintenance is in a still lower ratio. The extension of the rapid transit system in New York, and the tunnelling of the rivers to be done by the Pennsylvania and other railways, will confirm the data derived from the experience of the gas company which has a ten-foot tunnel under the East River, in which its mains are carried.

Bridges are almost equally important to Chicago, it being necessary there, however, to have so many that suspension bridges are out of the question, and swing or lift bridges must be used. Until quite recently Chicago's forty or fifty bridges were all of the centre-pier, swinging type. These had been carried to the highest degree of perfection possible, with electric motive power which swung them with a minimum interruption to traffic. The navigation of the river, however, was greatly im-

¹ Coler, "Municipal Government," chap. vi., New York, 1900.

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peded by the centre piers, and these are now being supplanted by rolling lift bridges, popularly known as the "jack-knife" pattern. These make no obstruction in the channel, and also protect the street when the bridge is open, it being not uncommon with the other type of bridge for reputable Chicago citizens to walk off into the river, in a fog. The need for rapid transit has also led to the construction of double-decked bridges, carrying the ordinary traffic of the street on one level and the elevated railways on another. Chicago has also two tunnels under the river, which have been surrendered to the Union Traction Company, which fact, together with their not being low enough to permit the river to meet its full possibilities as a navigable stream, places them in the category of antiquated transportation devices, while not in the least condemning modern tunnels, built for rapid transit on contemporary principles.

Cleveland and Milwaukee have river problems similar to those of Chicago; in the former city the high level viaducts and bridges, of which ten swing open and twenty are fixed, somewhat relieve the traffic by making frequent openings. In Milwaukee, which has no less than thirty-seven bridges, a movement was on foot recently to make the new bridge spanning the river in the heart of the city a monumental one, but the final result was an unsatisfactory compromise. Washington is probably going to set a new standard for the country in its Memorial Bridge over the Potomac.

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There are a few beautiful bridges in or near American cities which deserve special commendation, such as the Cabin John bridge in the District of Columbia; the High bridge and the Washington bridge over the Harlem in New York, the latter being doubtless the most beautiful cantilever bridge in the country (costing \$2,200,000); and the new concrete, wide-span bridges in Indianapolis and Zanesville. These concrete structures are worthy rivals of the stone bridges, notably the one at Harrisburg, with which the Pennsylvania Railway is supplanting its iron structures throughout the State of Pennsylvania. Since that great corporation is so impressed with the economy of stone bridges, its work will be a valuable lesson to municipalities.

Boston has 121 highway and twenty-seven park bridges, but it cannot be said that one of them is monumental in appearance. Pittsburg doubtless leads in the possession of ugly bridges, a negative feature which would scarcely need emphasis but for the fact that on the bridges which connect Pittsburg and Allegheny, virtually two parts of one community, toll is still charged. This primitive form of highway robbery is also practised on many of the bridges crossing the Mississippi to the equal detriment of the cities and their rural visitors. One of the fundamental necessities of life in modern communities, where mobility is at a premium, is the provision of streets and highways absolutely free to the travelling public.

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Having gained access to the city, rapid transit is one of the necessities of congested urban life, yet increasingly difficult to secure as the population of the cities becomes denser. In 1899, 528,228,437 passengers were carried on the surface and elevated roads of Manhattan. In 1898, 501,066,681 passengers were carried on all the steam railways of the United States. Nothing could better indicate the difficult and yet remunerative character of the function of transportation in the large cities than these figures, unless it were the fact that in 1901 over a thousand million people¹ travelled by the street railway systems of Greater New York. Some description of the provisions made by a few of the chief cities of the country may indicate the principles which guide or ought to guide in the solution of this difficult problem.

New York City presents the *pons asinorum* of all American communities, because of the great congestion of population on Manhattan Island and the obstacles presented by the topography to communication with the other portions of the city and the suburbs beyond the waterways. In consequence New York has a very imperfect system of suburban traffic. The railway stations and ferries are difficult of access, and not even coördinated by the surface railway systems. After struggling for many years with imperfect and for some time past belated horse-car lines; after waiting for years for the installation of more rapid transit through

¹ On the authority of President Vreeland.

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elevated systems, which, by the persistence of the use of steam, were nearly as belated as the cross-town horse-cars ; after surrendering these valuable privileges for little or no remuneration, and retaining no power for the compulsion of better service ; after waiting for the installation of a cable railway until the cable had become antiquated, New York has recently introduced improvements of great individual consequence, though unfortunately as yet without coördination. The Brooklyn Bridge Railway, for a time the one example of a municipally owned railway in the country, has been leased to the Brooklyn Company, in order to substitute New York for Brooklyn terminals, a beginning, it is hoped, of the penetration of the lines of other boroughs into Manhattan, and the substitution of through for radial routes, there being no more reason why these lines should terminate at the Manhattan than at the Brooklyn end of the bridges, when the latter are numerous enough to bear the traffic. Automobile omnibuses are running on Fifth Avenue ; compressed air cars for a time supplanted horse-cars on Twenty-eighth and Twenty-ninth streets, with the gain of cleanliness in the streets and a minimum increase of speed coupled with a maximum of discomfort for the passengers, and the great trunk lines are now operated by the underground electric conduit, the best form of surface transportation as yet devised in this country. The fact that the overhead trolley should be unknown on Manhattan Island is so notable an

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advance as to neutralize somewhat the primitive forms of transportation still persisting there. The latest of New York's improvements, still in process of construction, is, of course, the subway. In the face of Tammany's mismanagement, the final decision to have municipal ownership of the subway speaks volumes for the education of public opinion, though the method of control by surrendering all rights to a private construction company for fifty years, is inferior to the method of Boston, and unfortunate after the encouraging experience of that city.

Philadelphia presents a problem most peculiarly its own. No city in the country is so thoroughly under the domination of corporations, and yet the value of street railway franchises is so great to-day that the Union Traction Company, which has obtained complete control of the earlier railway lines of Philadelphia, could afford to agree to pave the streets from curb to curb in return for the privilege of substituting electricity for horses. This work, which was begun in 1892, has cost the company a sum variously estimated from nine to fourteen millions, and has transformed Philadelphia from a city of cobblestones to one of the best paved cities of the country. In addition to the advantage of having all the surface transportation facilities in the hands of one company, Philadelphia has a large number of through routes, and enjoys the doubtful privilege of universal transfers under a peculiar system which makes it costly to

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pursue one continuous journey on two roads, but makes it possible by a manipulation of these eight-cent transfers, sanctioned by the courts, to journey down town and back. These four-cent fares, which the more intelligent citizens thus enjoy, are doubtless more than made up to the company by passengers paying eight cents for a continuous ride, by the increased traffic, and by the security given to the company by this bribe of the public. Certainly the company is allowed to take liberties, which in the last five years would have been scarcely possible in any other city in the country. The conduct of Mayor Ashbridge, in throwing away unopened the letter from Mr. John Wanamaker, known to contain an offer of \$2,500,000 for recent franchise extensions and the giving of these privileges, without any public remuneration, to the existing company, would indicate that the people have sold their birthright for asphalt streets or four-cent fares, or else that they are too unintelligent even to appreciate such a mess of pottage. The recent granting of franchises by the State legislature, in contempt of any principle of home rule, inclines one to the latter explanation.

The capital city of the country, while not having such perplexing problems on account of topography or population as the metropolitan centres, has nevertheless solved its transportation difficulties with great credit to the national government. The companies hold their privileges through indeterminate franchises, giving the best form of control

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which can be exercised. Constant revision of arrangements being possible, with the economies of mechanical and administrative improvement, excuse is given for the demand of further concessions to the public. Within the city of Washington there are no overhead trolleys, the underground electric conduit being universal, as is also the grooved rail, while the control of affairs extends throughout the District of Columbia. Universal tickets good on all lines of the several companies are compulsory, and six tickets are sold for twenty-five cents.

Many of the lines run from the heart of Washington to suburban and rural points beyond the District of Columbia, the overhead trolley being used outside the city and the inconvenience of transfer being eliminated. The cars which run beyond the city limits are equipped with both overhead and underground trolley so that the transition from one to the other is scarcely noticeable to the passenger. On the whole, the Washington system is admirable, and furnishes the chief example in the country of the important fact that the greater the public control and the fewer the unrestricted privileges enjoyed by the company, the greater the advantages to the public. The experience of Washington is a continual denial of the persistent demands of companies throughout the country that they must enjoy great freedom of action to make their systems profitable or to give the people good service. As Dr. Bemis says: "The Washington

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street railways, like those of Massachusetts, enjoy no franchise. The acts creating and governing the roads contain the startling provision that they 'may at any time be altered, amended, or repealed by the Congress of the United States.' "

The city of Detroit under the generalship of Mayor Pingree developed a transportation system which is second only to that of Washington. There are, so far as the public is concerned, two companies each of which gives over its own system universal transfers, one selling eight tickets for twenty-five cents, the difference between a three-cent fare and a five-cent fare measuring the change in the public appreciation of the value of franchises wrought by Mayor Pingree. Old terminal routes have given place to through routes, relieving the business centre of the city of the congestion due to switching cars and loops, and giving the people much more rapid and effective service.

Milwaukee is another city which demonstrates the advantages of consolidation of through routes and of universal transfers. But in spite of these advantages and good cars, well heated in winter, with means of protection for motormen and conductors, or perhaps because of these things, Milwaukee shows the profitable character of street railway investment in the larger cities and the need of more rigid public control. The present mayor of Milwaukee was originally elected on a Fusion ticket of Democrats and Populists, to represent the welfare of the people as against the street railway

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company, whose interests were supposed to be especially furthered by the republican party, which had as its "boss" the president of the street railway company. As illustrating the tendency of modern municipal politics, it was discovered, however, on the election of this mayor and the body of "honest" aldermen, chosen in response to popular demand, that the corporation could use either party with equal advantage.

The railway company made an appeal in December, 1899, for an extension of its franchise for ten years from its expiration, which was at that time twenty-five years distant. The excuse was made to the people that to make certain extensions it was necessary for the corporation to protect itself by improving the value of its investment. For this extension, when it was found that something was necessary to appease the people, an offer was made of six tickets for a quarter at certain hours of the morning and evening, to be extended in five years to the whole day. The absurd inadequacy of this bribe to the public was evident not only from the well-known remunerative character of the enterprise, but also from the fact that some years previously the railway company had offered six tickets for twenty-five cents, good at all hours of the day for less return. In spite of the most powerful agitation conducted in any western American city for many years, the franchise was granted. Although it is well known that two men in that city, a hotel proprietor and a street railway official, are more

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powerful than the quarter of a million inhabitants, it seems late in the day for such methods, even with the connivance of public officials. This instance may, however, be taken as typical of the experiences already had or threatening in the chief cities of the country, and in the smaller ones as soon as transportation privileges seem profitable.

Occasionally a belated community will find or seek temporary relief in competition. The city of Atlanta profited temporarily by tickets sold three for ten cents owing to competition. Chicagoans enjoyed a round trip for five cents for a short time on a road which fell behind its competitors by reason of a broken bridge. It is evident from these experiences, as well as that of many cities in the past, that this economy of competition can be of only short duration.

It is to the ultimate advantage of the city that coördination or unification take place. In illustration of this, the experience of nearly every city where there has been consolidation may be given, provided of course that some measure of public control makes the consolidation effective. The example of Detroit has already been mentioned. In Toledo one corporation owns the two systems, which regularly sell six tickets for twenty-five cents, eight for twenty-five cents between six and seven A.M. and P.M., but the tickets are not interchangeable, although the cars often use the same rails. Unified management and municipal control have resulted in Columbus in securing seven

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tickets for twenty-five cents. In Rockford, Illinois, the same forces have caused twenty-five tickets to be sold for one dollar, and fifty school-children's tickets for the same price. In the latter city, also, the authorities have the right to insist on the use of the grooved rail whenever the streets are repaved. In Pittsburg, where the power of the citizen has been reduced to the minimum, the control of all the railways has been recently vested in the same hands, but there are no through routes, downtown terminals congest the already overcrowded streets, no transfers are given across the rivers, and a straight five-cent fare is exacted for facilities which are among the poorest in the country.

The most serious effort in any of the larger cities to perfect the transportation facilities is found, as has already been indicated, in Boston. The Report of the Rapid Transit Commission not only sets forth quite clearly the necessities of Boston, but may serve as a model for other cities. Their first endeavor was to find out accurately the distribution of the population of Boston and its surrounding communities, their modes of transportation, the cost over various lines, and the possibilities of coördinating the harbor facilities, railway terminals, surface, underground, and overhead rapid transit. As is graphically suggested in one paragraph of the report, a resident of Boston, who had been absent ten years, would have gone away leaving Tremont Street traversed by horse-cars, and would have returned to find it occupied by vehicles

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as large as steam railway cars, the speed of which was only restricted by the street's congestion. The limit of capacity of the surface tracks on Tremont Street prior to September, 1897, was found to be about two hundred cars per hour each way. "The cars in unbroken procession moved with a slowness which was vexatious, and which was aggravated by stop after stop of uncertain duration."¹ One year thereafter, with the surface traffic transferred to the subway, the number of cars which could pass a given point with ease was 282, the rate of speed having been increased from two miles to seven or eight per hour. The total mileage of two railway systems of Boston is over four hundred miles of single track. The subway trackage is one eightieth of this, and yet, of the two hundred million passengers carried in 1898, one out of four passed through some portion of the subway.

These figures will give some indication of the relief afforded to the transportation agencies of Boston by one of the improvements instituted by the Rapid Transit Commission. The subway is, of course, the chief result of this commission's investigation and subsequent legislation, yet it must be looked upon as simply the connecting link between the otherwise independent transportation lines. The peculiar topography of Boston made it both necessary and possible to put forward such a comprehensive plan, involving among other things an

¹ Report, Rapid Transit Commission, April, 1892.

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entirely new expedient so far as American cities are concerned. In fact, the underground transportation methods of European cities, such as Budapest, Berlin, Paris, London, and Glasgow, while furnishing suggestions for the treatment of tunnels, provided no analogy to a subway which should focus the surface lines coming in all directions, connecting them with every geographical division of the city.

Having decided upon the construction of a subway, its execution was accomplished with as satisfactory financial methods as have ever been used in American cities. Undertaking at the same time the experiment of municipal ownership, it was gratifying to complete the project well within the original estimate of 1894, which was \$5,000,000. This was doubtless partly due to the fact that the subway had been leased for a period of years to the Boston Elevated Railway Company, but even that was a guarantee of economy to the public.

The subway also involved considerable alterations in the other plans for urban transportation. The various street-car lines, which had been terminating in the heart of the city with the consequent disadvantages involved in switching, were coördinated so that, with the exception of a few loop lines, the majority of the branches were designed to run from one side of the city to another. To relieve the subway, a number of lines were devised which should connect separated geographical sections without passing through the subway. To

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meet the needs of a much neglected district an elevated railway was planned, which gives now a unique arrangement by virtue of the fact that it provides a unified system of transportation on three levels; furnishing, however, the anomalous condition of the most completely coördinated system of transportation in the country encumbered by the unsightly and antiquated trolley and elevated structures.

The difficulty of planning for the future is illustrated in Boston by the fact that the relief furnished by the subway increased the traffic to the point where further relief is necessary. A new subway under Washington Street must follow that under Tremont Street to give immediate relief, and the extent of subsequent improvements can scarcely be imagined, and certainly cannot be anticipated by present legislation. The value of "eternal vigilance" is also shown in the successful defeat, in the spring of 1902, of the Elevated Railway Company's endeavor to substitute private for public ownership of this new subway.

Chicago occupies a very conspicuous position among the cities of the country at present because, on the one hand, its chief surface railway franchises are about to expire, giving it an opportunity which few cities in the country possess, and, on the other hand, because it probably contains to-day the most confused and imperfect arrangement to be found anywhere. The division of the city by the river into three geographical sections has led to the

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organization of independent railway lines on each side of the city. The fact that those on the north and west sides have recently been united brings as yet no relief, since they are still operated independently. This lack of unity in the means of transportation is only the beginning of Chicago's difficulties. There are to be found also the chief objectionable features attendant upon any improperly supervised system.

Not only do the trunk lines of each side of the city terminate in the down-town business district, but spasmodic efforts to unite them have led to a multiplication of useless tracks in the already overcrowded streets. Before the advent of electricity the cable system was introduced on all three sides of the city for the chief trunk lines, and that form of power, which is at its best antiquated, to-day has its usefulness still further impaired in Chicago by the neglect of the companies, which decline to introduce improvements until the decision as to their future is made in 1903. They might long ago have substituted the underground trolley for the cable, except that by so doing they would have demonstrated the possibility of its use in Chicago, which they have strenuously denied in the interest of the extension of the overhead trolley.¹ The cars in Chicago are inferior to those in most of the cities

¹ The same argument is used in Baltimore, that the drainage problem makes the underground conduit impracticable, the absurdity of which is shown by the fact that this excuse was also urged in Washington.

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of the country, and to add to the discomfort of the passengers, they are poorly heated and ventilated in winter, many of them as yet are unprovided with vestibules, and on the cable lines they are run in trains of two, three, and four cars, with great disadvantage to the general traffic of the street and inconvenience to the patrons of the companies. There are only two routes in Chicago on which modern cars are used. These large cars, equipped with good vestibules, fenders, electric heating apparatus and signals, and air brakes, present a startling contrast to the primitive conveyances used elsewhere in the city.

The general defence of the Chicago companies for the imperfections of the systems is that of uncertainty as to their future, and also that they carry people such long distances for five cents. The second contention ignores the large number of short-distance passengers who are known to use the street cars daily, although the statistics of the companies carefully obscure their exact number. In spite of the first objection several of the companies have recently spent large sums of money in increasing their plant, regardless of the uncertainty of their future. As to these alleged difficulties of improving the system on account of not giving them a proper return upon their investment, some of the figures brought to light in an investigation of the railway company's books may be instructive.¹

¹ Milo Roy Maltbie, Analysis of Financial Operations of Street Railways of Chicago, "Municipal Affairs," June, 1901.

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"The franchise values for which the companies pay the city nothing amount nearly to \$75,000,000,—a sum almost equal to the watered capital,—which shows how closely the companies have estimated the capital to be issued upon the franchises. . . . The Chicago City Railway Company has paid upon an average over 42 per cent annual dividends for the last nineteen years. The North Chicago City Railway Company has paid 30 per cent since 1886; the North Chicago Street Railroad Company nearly 15 per cent for fourteen years." The remunerative character and at the same time the importance of this great public service in our larger cities, as illustrated by Chicago, is indicated in an address given by Mr. William Ritchie at the Rochester conference of the National Municipal League.¹

"In 1890 the street cars of Chicago and suburbs carried less than 181,000,000 passengers, with a population of 1,099,850. In 1900, including the elevated lines, they carried over 362,000,000, with a population of 1,698,575. That is to say, while the population was advancing at a rate of less than 55 per cent, the street car traffic increased over 100 per cent. In 1890 the street cars carried the entire population 164 times. In 1900 the rides per capita advanced to 208. Each man, woman, and child in the city, on the average, paid for car fares in 1890 the sum of \$8.20. In 1900 this per

¹ William Ritchie, "The Street Railway Situation in Chicago," Rochester Conference for Good City Government, 1901, p. 173.

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capita tax had risen to \$10.40, no inconsiderable amount for the average family of four or five persons."

In the face of these economic possibilities it is discouraging to observe that in 1883 the Chicago authorities compromised the question at dispute with the railway companies by exacting car licenses of \$50 a car, a provision which has since then been so interpreted by the companies that even this trifling compensation for their privileges is largely evaded.

The Chicago experience has at least proved of advantage to the country at large, and it may be of still greater service if the franchise question is handled in 1903 as it ought to be in view of the great public interest shown in the question. Among the contributions to the general fund of information on transportation problems are the several reports which have lately appeared analyzing the conditions and prescribing remedies.¹ The secretary of the first Council investigation, Mr. George E. Hooker, has made some suggestions in the second report, which may indicate the value of Chicago's "awful example," and which we here appropriate.

There are four features of street railway development observable to-day. First, the consolidation

¹ Report of the Special Committee of the City Council of Chicago, on the Street Railway Franchises and Operations, 1898. Report of the Street Railway Commission, 1900. Articles in Municipal Affairs, June, 1901.

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of management.¹ Second, the substitution of electricity for other power, as found nearly universally for horses to-day, and for the cable in Baltimore, Washington, St. Louis, Cleveland, and New York. Third, the tendency to universal transfers, illustrated especially by Detroit.² Fourth, the substitution of diametrical for loop and radial routes, as seen in Boston, Detroit, Milwaukee, and Washington. To these may be added many instances of the following tendencies, not noted by Mr. Hooker:—

Fifth. Limitation of the franchise, commonly to twenty years, in Wyoming to ten years, or better still, indeterminate, as in Massachusetts, in Rochester and the District of Columbia. Syracuse offers the franchise to the highest bidder, giving three weeks' notice by advertisement. In this connection must be mentioned also the growing sentiment that a franchise is not a contract but a license; that since no adequate return is given for the privilege, and since the corporation has everything to gain and nothing to lose, the franchise belongs in a category by itself.

Sixth. The limitation of stock issues, prevailing in Massachusetts and the District of Columbia.

Seventh. The reduction of fares³ brings out the

¹ E.g., in Boston, Philadelphia, Pittsburg, Buffalo, Detroit, Cincinnati, Brooklyn, Manhattan, Baltimore, St. Louis, St. Paul, and Minneapolis.

² Practically in vogue in Brooklyn, Buffalo, Cincinnati, Boston, and St. Louis.

³ Exemplified by Washington, Detroit, Toledo, Columbus, Indian-

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fact that compensation of the city by the railways is an indirect and unjust tax. Baltimore receives 9 per cent of the gross revenue of the companies, amounting, in 1900, to \$285,410.38, which is devoted to park expenditures. Originally, the city took 20 per cent in lieu of a reduction of the fare to four cents, but subsequently lost its grip, with the result above stated. If the railways can pay 20 per cent of their gross receipts into the city treasury, as they can in most of the large cities, they can with much greater justice reduce a five cent fare to four cents. Low fares distribute the population and impose a tax on property owners, whose values are raised by good transportation, while high fares act as much to discourage patronage as does the tax laid on tobacco and liquor. High fares also impose a special tax on users of street cars as distinguished from patrons of other transportation agencies. These patrons are at the same time those least able to bear such a tax. The defence of compensation *vs.* low fares, on the ground that it is an easy way for the city to collect taxes and that most cities have depleted treasuries, places the burden of municipal mismanagement and real estate speculation on the working classes, who furnish most of the revenues of the transportation companies.

Eighth. A high regard for labor is not generally
apolis; Rockford, Illinois; Fall River, Massachusetts; Cleveland,
and Milwaukee.

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evident in the attitude of the street railway companies, but is becoming one of the demands of the public in the extension of franchises. Higher wages are justified not only on account of the semi-public character of the transportation services, but also because of the responsibilities of the employés. A very instructive contribution was made to *The Outlook* several years ago by a gripman, who called attention to the conditions in vogue in New York. The hours of work are excessive for all the employés, because of the unavoidable delays incident to making the required number of trips, and especially protracted are they for the extra men who are serving their apprenticeship. The buying of uniforms is a burden, made more noticeable by compelling the patronage of a certain clothing company. Accidents are not only threatening incidents in the everyday life of each gripman, but burdensome to him both economically and personally, especially when due, as is frequently the case, to defective machinery. The maintenance of the speed required in modern rapid transit taxes the motorman of itself, and is made doubly difficult by the dangers it involves. A comparison of the hours and wages of railway employés with those in similar occupations under more direct municipal supervision indicates that this is not the least of the interests the public has in a more rigid control of its transportation facilities.

The frequent strikes of street railway men

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testify to their dissatisfaction, and the almost universal failure of the men to gain their demands, as well as their inability, usually, to organize, give the public but a faint idea of the system of tyranny under which they generally work. A limitation of the working day to nine hours and the privilege of organizing, which are enjoyed in Detroit, or the arbitration clause in the franchise at Galesburg, Illinois, are exceptional, though there is a ten hours law in Massachusetts, Rhode Island, New York, and the District of Columbia, and permission to organize has recently been granted in Chicago. The great dependence of the public on the maintenance of the transportation services and the general sympathy expressed for the employés in street railway strikes like those of Philadelphia, Brooklyn, St. Louis, Milwaukee, Albany, or Rhode Island, curiously enough, do not find expression in franchise limitations as yet, nor always in the enforcement of existing legislation. The strikes in Brooklyn and Rhode Island were said to be due to a non-observance by the companies of the State law limiting the day's work to ten hours.

The power of the companies to overwork their employés is traceable to the same cause which enables them to charge excessive fares for poor service and to corrupt municipal officials to compass these ends,—the supreme importance of transportation in our modern urban life.

Whatever may be the mechanical improvements of the future, and however generally their

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use may be extended over the country ; whatever advances may be made in administration ; whatever the city may gain by compelling the reduction of fares or insisting on better service or even undertaking the operation of the railways themselves, if the needs of the people are to be met, transportation must cease to dominate and must become subservient to the needs of life ; that is, it must ultimately be given a more rational position in our modern municipalities. If there be exaggeration in the lines of John Ruskin,¹ they at least suggest the danger that in the form of rapid transit we may have created a Frankenstein.

¹ "Our cities are built in black air, which, by its accumulated foulness, first renders all ornament invisible in distance, and then chokes its interstices with soot ; cities which are mere crowded masses of store, warehouse, and counter, and are therefore to the rest of the world what the larder and cellar are to a private house ; cities in which the object of men is not life, but labor ; and in which all chief magnitude of edifice is to enclose machinery ; cities in which the streets are not the avenues for the passing and procession of a happy people, but the drains for the discharge of a tormented mob, in which the only object in reaching any spot is to be transferred to another ; in which existence becomes mere transition, and every creature is only one atom in a drift of human dust and current of interchanging particles, circulating here by tunnels underground, and there by tubes in the air ; for a city or cities such as this no architecture is possible —nay, no desire of it is possible to their inhabitants." (Ruskin, "Lectures on Architecture.")

CHAPTER III

PUBLIC WORKS

THE term "public works" is usually applied in American cities to functions directly or indirectly connected with streets. This application is obvious in the case of street paving or cleaning, is remoter in such public services as underground conduits, sewers, water, lighting, and fire protection. The popular use of the phrase, as comprehending economic activities, will be adhered to, except that all the sanitary functions will be discussed in a subsequent chapter.

A branch of public service in which American cities usually excel those of other countries is the fire department. This is due partly to the supervision exercised by the fire underwriters, and partly to the inferior character of American buildings as compared with those of cities in the Old World. Greater restrictions have been imposed recently in New York and Boston, but it is still difficult to regulate the old buildings. Chicago provided by statute several years ago for the limitation of the height of its sky-scrapers to one

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hundred and fifty feet, which accounts for the generally greater height of New York buildings. This admirable law has now been repealed, as it was opposed by powerful newspaper influence. Mechanical and protective devices improve more rapidly in the United States than the building regulations, thus making necessary and possible better agencies for extinguishing fires than are afforded in European cities. The American fire departments are not only characterized by constantly improving mechanical features, such as fire-alarm telegraph and vehicles, including recently even the occasional abandonment of the efficient fire department horses for automobile engines, but also by an equally constant improvement in the organization of the service by the elimination of volunteer firemen and the multiplication of regulars. From the Atlantic Ocean to the Pacific these advances are rapidly taking place, and there is no geographical monopoly of the improvements. The three-horse fire engine and trucks may be seen on the Pacific Coast, and the automobile steamers in New Orleans.

Those who remember the days in some of the older cities when volunteers were the only firemen, and who have rejoiced in the abolition of that pernicious and inefficient system, as it flourished, for example, in Philadelphia, may be surprised to learn to what extent it still persists. Among the first cities of the land, New York is the only one to maintain a volunteer system, having 4000 such fire-

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men to 2430 regulars.¹ In general mechanical equipment New York and Boston far outstrip the other cities of the country, although some of the newer and more excellent features have had important developments in smaller cities.

Most of the larger cities bordering on great waterways have a fire-boat service, by which the property along the river, or lake, or bay is protected. Within their radius of efficiency the fire boats are much more powerful than the other devices for throwing water, and this has suggested their use for pumping water far beyond the limits of the streams they can throw directly. Some indication of the importance of this addition to the fire equipment of the cities with navigable streams may be indicated in the following description of a Chicago fire-boat.²

"Some of the most powerful and costliest vessels of this kind are in service on the Great Lakes. One of the finest of these is the fire-boat *Illinois*, constructed a few years ago for the city of Chicago. The conditions existent in this vessel's field

¹ Among the smaller cities we find Reading, Pennsylvania, with 37 regulars and 2800 volunteers; Wilmington, Delaware, with 16 of the former, and 1100 of the latter; Troy, New York, with 49 regulars and 685 volunteers; Harrisburg, Pennsylvania, 13 and 1500 respectively; Yonkers, New York, 40 and 725; Allentown, Pennsylvania, 25 and 896; York, Pennsylvania, 11 and 900, and these 11 regulars paid by the volunteer companies; and Bayonne, New Jersey, no regulars and 500 volunteers. (Bulletin of Labor, September, 1901.)

² Walden Fawcett, *The Fire Fighting Fleets of American Cities, Municipal Journal and Engineer*, 1900.

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of work made it imperative that she should be an exceptional craft in many ways. The Chicago River, which is lined on both sides with large buildings, many of them of frame construction, is a narrow and tortuous stream, and it was obvious, therefore, that while the fire-boat must be able to move quickly, she must also be susceptible of turning suddenly and sharply, and so stanchly constructed that in ordinary collisions with wharves or vessels she would sustain no great damage. Finally, it is essential that the vessel being intended for all-the-year service shall be able to plough her way through the ice floes which form in the Chicago River in winter.

"The *Illinois*, which cost \$68,500, is built of steel, her hull having four water-tight bulkheads and the forefoot being so cut away that the vessel can run up on the ice and break it away. . . .

"Perhaps the most interesting feature of the machinery installation of the *Illinois* is the battery of fire pumps. . . . When these great water guns are in operation they are capable of sending solid streams of water with incredible force, which, even at a great distance, have sufficient power to demolish any ordinary brick wall."

The credit of the first adoption of fire-pipe lines, is claimed by Cleveland, but contested by Milwaukee. In Cleveland the extension of the system was due to an effort to reach the top of the bluffs adjoining the river, a distance of seven or eight hundred feet, by laying six-inch cast-iron pipe.

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The advantages were so great that this extension, which began in 1888, had by 1897 developed into four lines of service, comprising a total length of three miles. Milwaukee now possesses twenty-five such lines, extending over a length of more than eight miles, giving a service of one hundred and sixty-four hydrants, supplied by three fire-boats, each of six thousand gallons' capacity. Detroit and Buffalo have developed similar services.

Boston and New York have begun the use of salt water for fire protection, after the example of British cities. In each case the remoteness of the city's water supply makes it very desirable that some more economical secondary supply be used for such purposes. In Boston the pipe line runs from one side of the city to the other, giving a double fire-boat connection. In New York the success of the system in protecting high buildings has led to the proposal for its virtually indefinite extension throughout lower Manhattan Island, with the additional advantage that the supply is designed now to serve also for street sprinkling.

It must be admitted that the uniform superiority of the fire department in American cities over the other public services is a relative one, and sometimes the excellence is only apparent because of the low state of development of other municipal functions. Repeatedly instances occur where the city is threatened with destruction by fire because of the failure to coöperate with the company furnishing the water supply. Examples, such as that

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furnished by Indianapolis in 1901, are also not uncommon, where an inadequate fire-alarm service endangers the city in spite of an otherwise well-equipped fire department.

While the fire departments present the most uniformly efficient feature of municipal organization, the fundamental municipal function is that of the care of the streets, including therein street paving, cleaning, and the subterranean constructions.

The economy of good street paving is being slowly appreciated in American cities. Recent improvements here, as well as the longer years of European experience, tend to demonstrate the importance of a twofold principle: good paving consists in a substantial foundation, covered by a surface kept constantly in repair. Macadam, wood, brick, stone, asphalt, and other surfaces are merely top dressings, which, if laid on a solid foundation of concrete and kept in repair, will insure good streets, requiring only in each case to be adapted to the particular needs of certain quarters of the city.¹ Secondary principles will of course need emphasis, such as the necessity of using good materials, the requirement of long and well-protected guarantees, and the consideration of the special functions of a given street.

The gradual recognition of scientific paving methods is quite as responsible for the present

¹ It is claimed in Kansas City, Missouri, that a double layer of bricks, using inferior brick for the lower layer, is an economical and effective substitute for a concrete foundation.

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substitution of brick and wood for asphalt as is the conduct of the asphalt companies. The mere economy of brick and wood is doubtful, even where the time-honored American plan prevails of paving the street hastily and cheaply with no expectation of repairs, but with the anticipation that when worn out the streets will be repaved. If proper methods are followed, the question becomes almost entirely one of function. Even Belgian block may be made as smooth as brick, if carefully squared and set, as is done abroad; but with the passing of the horse, doubtless asphalt will supplant the other solid pavements in the chief business and traffic streets, except in the wholesale districts and similar places, where granite block seems to hold its own.¹

The experience of many European cities, however, and more recently of Boston and Indianapolis, indicates a significant revival of the use of wood. There is an unfortunate popular prejudice against wooden pavements, due to the observation of such cities as Chicago and Superior. Chicago has 750 miles of streets paved with wooden blocks, out of a total of 1324 miles. Superior, Wisconsin,

¹ Philadelphia has 358 miles and New York 460 miles of granite block paving.

Brick is apparently the most popular pavement in the smaller cities of the North Central States. It is comparatively little used in the larger cities, although Philadelphia has 127 miles, Cleveland, 80, Columbus, 75, and Chicago, Cincinnati, Detroit, Louisville, and Kansas City, Missouri, each between 25 and 50 miles of brick paving. (*Bulletin of Labor*, September, 1901.)

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has used only wooden blocks on its 34 miles of paved streets. Other western cities have used wooden blocks extensively, Detroit being a leading example. The prevailing method in these cities, however, has been that of using cheap cedar blocks (without any such treatment as is given to the creo-resinate blocks of to-day), laying them on boards, which in turn are laid upon a thin layer of sand or the soil itself. The result on such a foundation as that of Chicago is that great ruts and holes are soon worn in the streets, and in the poorer districts it is not uncommon in a few years to have the entire street paving, which has become useless for its original purpose, transformed into some of the elements of human life by being used for kindling wood in the neighboring houses. This prejudice is the more unfortunate, as millions of feet of good gum wood are being shipped annually from Missouri to London. The creo-resinate blocks, being laid quite extensively in Boston now, are quadrilateral in form, of long-leaf Georgia pine, four inches deep and four by eight inches on the wearing surface, laid on six inches of concrete—a much smaller depth than is usually found abroad. When these blocks are properly laid, their wearing power is almost equal to that of any other paving, and they have the great advantage of being virtually noiseless.

What has been said of wooden pavements will apply in a measure to macadam when properly laid in the residence districts. A good foundation

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and the constant repair of the surface make this the most appropriate paving for a residence street, especially where the street is bordered by lawns.¹

American cities are at present in the throes of a remarkable development of street paving. Scores of the smaller cities which ten years ago were without any form of paving have to-day many miles of well-improved streets. New York has effected one of the most creditable transformations of recent times by the use of asphalt in the crowded tenement districts of the East Side, giving, in view of the dense population and heavy traffic, doubtless the most desirable form of paving to those sections. New York has to-day 264 miles of asphalt paving, which is, however, exceeded by Philadelphia, where there are 289 miles. Philadelphia, in fact, has experienced the greatest metamorphosis of any city in the country of late years, owing to the agreement made with the traction company at the time of the introduction of electricity, whereby every street on which its tracks are laid was paved by the company from curb to curb.

Buffalo ranks third and Washington fourth in the use of asphalt, the former city having 224 miles,

¹ Macadam has been used in New York on 766 miles of streets, in Chicago on 387, and on over 100 miles in Philadelphia, St. Louis, Boston, San Francisco, Cincinnati, Providence, Nashville, and Oakland, California, in the last two cities constituting nearly all the paving. (Bulletin of Labor, September, 1901.)

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and the latter 126, in each case a very large proportion in relation to the area and population. Buffalo, with fewer than four hundred thousand inhabitants, has a larger mileage of asphalt streets than London and Paris together. The fame which Buffalo achieved by the extent and superior character of its street paving has attracted such attention to it that the imperfections as well as the excellences have been revealed. The streets which have been most recently asphalted have not worn as well as the earlier ones, owing to the poor workmanship and materials, aided by insufficient guarantees and inspection. There are miles of asphalt streets which are scarcely passable. A difficulty has also been experienced there as in all the other cities, caused by the failure to insist that the street railway companies shall use grooved rails. The cheap methods of the street railway corporations are as responsible as those of the asphalt companies for the bad condition of many expensive pavements.

Indianapolis is another city which gains a very substantial and clean appearance by the use of asphalt, but the chief defect of that paving is seriously felt, viz., its power of heat radiation. In midsummer the streets of the inland cities do not have time to cool off during the short nights.

The city of Dayton, Ohio, introduced so much asphalt that for several years the taxpayers were very heavily burdened and other public improvements were retarded, but now that they have passed through this period of financial stress the

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city is reaping the benefit in vastly improved appearance, a higher standard of health, and an increase of business, all, at least, indirectly traceable to the substantial paving. Some quite small cities of twenty or thirty thousand inhabitants, such as Muncie, Indiana, have such a relatively large amount of solid and smooth paving on their business streets as not only to facilitate the traffic of the community, but also unquestionably to invite the interest and patronage of strangers. Augusta, Georgia, has a central thoroughfare, Broad Street, 120 feet wide, paved with asphalt to the great improvement of its business district.

There seems to be no doubt that good paving pays a dividend which writes off the tax obligation. It becomes only necessary to see that the taxes are spread over such a period of years as to reduce the burdens to a minimum. While many of the American cities are disgraced by the absence of paving, Baltimore holds the distinction of being notorious by virtue of the extent of a certain kind of apparently substantial paving, it having 321 out of its 400 miles of streets paved with cobblestones.¹

One of the secondary problems involved in this question is that of the tearing up of the streets

¹ This worst of all forms of paving, found to some extent still in New York (which has 229 miles of it), Philadelphia, Cincinnati, Pittsburg, New Orleans, and elsewhere, prevails in Baltimore by reason of the fact that cobblestones were largely used for ballast in the ships returning without a cargo to that port.

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for public improvements. Municipalities generally place restrictions about corporations and individuals with a view to protecting the paving and retaining the control of the streets in the hands of the city. At the same time, the restrictions are seldom stringent enough and the enforcement of them is frequently lax. Conduits should be introduced either under the curbing or in the middle of the street, reached by frequent manholes. The continual taking up of the paving for the introduction of wires and pipes breaks the bridge of the street, and will inevitably lead to its general destruction.

There are cities, of which Chicago is the chief example, in which companies endeavor to put down conduits which will provide for all the electric wires and cables, and there is no reason why the plan should not be extended to include gas, water, and heating pipes, and possibly pneumatic tubes. A much more satisfactory plan would be to have municipal provision made for all such underground construction, as is done by the Boston subway. The objection is made by some interests that it will not do to have electric currents of different voltage in the same conduits, but this seems to be a protest in the interests of corporations as against public construction. Many cities are putting all the wires underground or compelling the companies to do so, at least under their chief business streets. In New York and Chicago there are almost no overhead wires in the business district. This is a very great relief to the streets from the standpoint of æ-

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theretics, is a source of additional protection against fire, and is an economy to the companies, as the disastrous results of great snow and sleet storms frequently testify. In Boston the wires are being put underground at a rate of not more than two miles a year. St. Louis has 115 miles of cable in conduits. In Kansas City, where some wires are underground, the city receives ten cents per foot per year for the use of conduits.¹

The economy of good street paving is further in evidence when the question of street cleaning arises. Increased street traffic necessitates improved cleansing facilities, and these involve the questions of topography, paving, and administration, as well as the immediate methods employed.

The city of Chicago is perhaps an unfortunate example to choose to illustrate the relation of topography to street cleaning, because the methods in vogue in Chicago would not keep clean a city like Baltimore or Pittsburg, where the drainage is ideal. Nevertheless, Chicago's enormous area and the fact that most of the city has been redeemed from a swamp by the raising of the city datum from eight to sixteen feet makes the problem an exceptionally difficult one. Although 70 per cent of New York's streets are paved and only 35 per cent of Chicago's streets, there are more square

¹ Minor cities which have eliminated some of the overhead wires are New Britain, Connecticut; Syracuse, New York; Norfolk, Virginia; Toledo, Ohio; Spokane, Washington; and Los Angeles, California.

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yards of paving per capita in Chicago than in New York, as there is also over 60 per cent greater mileage of streets in Chicago. With an area of 191 square miles, she boasts of 4152 miles of streets and alleys, as compared with 2508 for New York, with an area of 308 square miles.

The problem of street cleaning has of course to deal with the conditions as they are found, and given certain topographical conditions, to use such methods, to make such appropriations, and to effect such organization as will keep the streets clean. As in the case of fire protection, which involves the fundamental question of building methods, so in street cleaning a scientific treatment will begin with good paving. The fact remains that most American cities do not clean properly such well-paved streets as they have. Indeed, one may go further and say that most Americans do not know that cities may be kept clean, never having had the experience of seeing a clean city. It is not uncommon for cities to make an effort to keep some streets clean while neglecting all the others, as was formerly the case in New York and is still in Pittsburg and many other rapidly growing cities. Mr. Ruskin's injunction is not popular in American cities — "to keep the back streets clean, for the front ones will take care of themselves." In the face of the neglect of this great hygienic and economic question, one may note with much satisfaction the recent improvements of many American cities, led by the metropolis of the

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country, where street cleaning was revolutionized by the masterful methods of one man.

In the old Tammany days many of the streets in New York were never cleaned, and it was held that some of them could not be cleaned. The practice was common in many of the streets of the East Side to allow wagons to be stored. It was said that there being no alleys and the district being compactly built, there was no other place to put the wagons. During the winter the snow would accumulate about these places; along the line of the street railways it would be thrown up in heaps under and over the wagons and remain so indefinitely. It was even contended that some of the asphalt streets were covered with a thick, sticky substance which could not be removed. It was claimed that the chief constituent of this coating was axle grease, and that there were no known methods, at least within the reach of the annual appropriation, by which the paving of these streets could again be made visible.

It was popularly surmised, though not fully known until the advent of a reform administration, that the mismanagement of New York's streets was due to Tammany's necessity of providing places for a large number of retainers. It was generally supposed, however, that this was the unavoidable condition of affairs in American cities, and the mass of the population expressed very little hope of change, as well as very little desire for it. Under the administration of Mayor Strong, how-

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ever, there was chosen as head of the street cleaning department a man with large experience as a military officer of the United States, with an extended knowledge of sanitary questions, and great ability as an executive. In spite of his being known to possess these unusual qualifications, Colonel Waring astonished the people of New York and of the country by the revolution he wrought in the street cleaning methods of the metropolis.

Colonel Waring found the Tammany employés despised by the public, and having little respect for themselves and none for their work. Their positions were uncertain, as it was constantly necessary to make places for new men who needed reward. These men, without uniforms, without organization, one might almost say without obligation, succeeded under Commissioner Coleman in 1888, in cleaning 53 of the 342 miles of paved streets in the city district. Under Colonel Waring 433 miles of streets were cleaned from once to five times a day by an army of 2500 men, organized after military methods, taking as much interest in their work and as greatly respected by the public for it as are the members of the fire department.¹

¹In a report issued by the Citizens' Union a simple indication of the improvements wrought is given in the statement that under the old régime less than 23 miles of streets were cleared on the average after a snowstorm. This was done very slowly and almost exclusively in the wholesale business district. Under Col-

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One of Colonel Waring's simplest devices to secure efficiency was happily spectacular enough to attract the attention of the country. He put his men into white uniforms. Although he kept most of the men in service whom he found left there by Tammany, he so altered their appearance that the bent and ragged crossing sweeper of the old days would not be recognized in the man in neat white duck suit, with military carriage. These uniforms had the effect of giving the men self-respect, of attracting the attention of the public, and of making inspection easy.¹

Not the least important feature of this new system was the organization into districts, with inspectors and supervisors, under military discipline, but with the democratic exception that a conference was held once a month between Colonel Waring's personal staff and the men, represented by

Colonel Waring 144 miles were cleared promptly. This included all of the streets below Houston, half of the streets from there to Fifty-ninth Street, all the main thoroughfares, and the crowded tenement districts. A table is given making this comparison: "Under Tammany's 'political' methods; five years beginning 1889, 221,569 loads of snow removed at a cost of \$178,737.34. Under Colonel Waring's 'business' methods; five weeks in 1895, 253,481 loads of snow removed at a cost of \$173,839.20."

¹The cost of the uniform was \$1.25 (each man having two), the helmet, \$1.30, the oilskin suit for rainy days, \$1.10, belt and buttons 88 cents, making a total of \$5.78. The city provided each sweeper with a broom, watering-can, scraper, and bag carrier ; the man was required to furnish a shovel and a small hand broom. New men were paid \$600 for the first year, \$660 for the second, and \$720 for the third.

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one delegate from each section and one from each stable.

Although Colonel Waring has passed away, his methods have been extended to many of the other cities of the country. The majority of the larger cities now clean their streets by day labor.¹ The amount of street cleaning done in New York is so much greater than that done in any other city of the country as to be scarcely comparable. New York sweeps nearly 200,000,000 square yards per week, as compared with 25,000,000 in Philadelphia, the city next in rank. Chicago and Boston each fall short of 10,000,000 square yards, less than is cleaned weekly by Milwaukee, Washington, Minneapolis, and Kansas City. Comparisons are made difficult, however, by the necessity of considering quality as well as quantity. The cleanest cities in the country outside of New York are generally the smaller well-paved communities.

Street sweeping in New York has always been hampered by the existence of a private corporation known as the Street Sprinkling Association, which has enjoyed an exclusive privilege of sprinkling the city streets, and which has never worked in harmony with the street cleaning department, so that as long as it enjoys a license for this privilege, there must exist that gap in the public organization of these functions.

¹The chief exceptions are Philadelphia, Baltimore, Cleveland, Buffalo, San Francisco, Washington, Jersey City, and Indianapolis. (Bulletin of Labor, September, 1901.)

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Having cleaned the streets there are still many processes necessary in the disposition of the city's refuse, and there remains also the removal of household wastes. For many years in New York such products were carted to the water front, where these objectionable materials were placed upon barges and scattered by hand labor in the waters of the bay or on lowlands, with very noisome results in either case. In 1888 the government established the office of Supervisor of the Harbor of New York, putting in charge an officer of the navy with a view to restricting the deposit of matter in the harbor. About \$30,000 a year are thus spent to protect the city of New York against its own stupidity in filling up its harbor. Up to 1895 occasional efforts had been made to relieve the nuisance of distributing the wastes of New York on the waves of the sea to the various seaside resorts, by burning the conglomerate mass of ashes, street sweepings, garbage, and other refuse. This was done so imperfectly as to furnish very little relief. In 1893 a scheme was devised for inclosing about seventy acres of land under water at Riker's Island on the Sound, and filling it in with city refuse. This became such a nuisance the next summer that it had to be prohibited.¹

Under Mayor Strong's administration the city paid the contractor about \$90,000 a year for the transportation and disposition of about one hundred and fifty thousand tons of garbage. This

¹ Meade, *City Cleansing, "Municipal Affairs," December, 1900.*

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was much more than had been paid for dumping the refuse at sea, but that process had had the objectionable results already indicated, and included the loss of many of the waste products which were found of value to the city under the new process. By this old method of throwing materials into the sea a certain revenue had been derived by giving Italian contractors the privilege of "trimming" the material on the boats. This had been a very disagreeable occupation, degrading to those engaged in it and offensive in its results. Colonel Waring dispensed with this method by providing a plant for the sorting of the wastes before the final disposition of the materials. The old dumps, which were found in a dilapidated condition, and the old carts, which were equally ineffective, were replaced by new steel-constructed dumps and metal carts. The old barges were supplanted by the Barney dumpers, which opened in the middle when they were at sea, and gave a greater opportunity for the sinking of the heavier materials. The plant at the dump included a wide belt which carried the materials past the lines of men, each of whom had as his function the selection of some one object. The results of these improvements were expedition, efficiency, and economy, although there is no doubt that had Colonel Waring lived and the administration continued, the time would have come when the city might have dispensed with the large payment to the contractor on Barren Island, as well as have settled the sanitary and mechani-

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cal problems involved in the filling in of Riker's Island. Tammany, while not going back to its old methods, failed to enforce the provision with regard to the separation of garbage and ashes, involving the city in further expense in dealing with the contractor; and the failure to make the various departments of the city work together, owing to the dominance of political pulls, reduced the efficiency of the whole system. The present administration is handicapped also by Tammany's extravagances, even the blankets of the horses having been appropriated as spoils.

The city of Boston has also developed a system of separation of its wastes, which is, for the most part, accomplished by private corporations.¹ Boston has also made great advances of late years, but neither it nor New York has yet approached the completeness of system or economy of management found in many of the European cities.

The disposal of garbage in Cleveland is a function of the health department, the chief officer of which supervises the negotiation of contracts. The city provides excellent garbage wagons made of steel, with metal covers, which are offensive neither to sight nor smell. The garbage is gathered two or three times a week by the sixty teams which

¹ Boston employs day labor to collect its ashes, 26 per cent of which are dumped at sea and 74 per cent used for filling. Of the refuse and waste 80 per cent is delivered to the City Refuse Utilization Plant. Of the garbage 24 per cent is fed to hogs and 76 per cent delivered to the New England Sanitary Product Company.

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are employed. The wagon beds are loaded directly on to freight cars at the yards of the corporation which is in charge of the disposition of the garbage. The garbage is destroyed in furnaces. Steam, superheated to a temperature of four hundred degrees, volatilizes the contents, leaving no solid residue except such extraneous materials as horseshoes, tin cans, etc., and the ashes or cinders of the consumed garbage. This brown dust, composed of ammonia, phosphoric acid, and potash, is worth \$6 a ton, and is sold as the base of a fertilizing material. The cost of this system to the city is \$69,400 a year.

The city of St. Paul has lately undertaken to dispense with the contractor in the removal of its garbage. A serious fight was precipitated by the Civic League, an organization of women who had made an exhaustive investigation of the actual conditions, and in spite of the contractor's "pulls," they succeeded in having the function transferred to the health department, which has since then given satisfaction. Syracuse collects its garbage by day labor, after which it is reduced by contract for \$26,000 a year, and sold as a fertilizer. Taunton, Massachusetts, has a system of feeding garbage to swine which is nearly self-sustaining.

A number of experiments have been made in the reduction of garbage, and in cremation.¹ The

¹ The Merz process has been used in Buffalo, St. Louis, and Pittsburgh. In Buffalo, in 1900, 22,881 tons of garbage were reduced at a cost per ton of 69 cents, and per capita of 4½

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destruction of garbage by cremation seems to be the natural and ideal method. It can be done readily by the householders, where coal ranges are still used, or private furnaces may be erected in the yards. The advantages of a common disposition of the garbage is the possibility of some economy through the use of the heat generated in the cremation, although this does not seem to have been secured in any of the American cities.¹ There seems to be no reason why a compactly built, well-

cents. St. Louis pays \$1.80 a ton for reduction, up to one hundred tons a day. Any amount over that is reduced without cost to the city. This process requires the drying of the garbage which is avoided in the Simonin process, which also extracts the grease by the use of naphtha. A plant in operation in Cincinnati, in 1896, disposed of fifteen thousand tons at a cost of \$1.62 per ton. The Arnold process is used by the contractors of Boston, New York, and Philadelphia. Out of the sixty thousand tons collected in Boston in 1899, forty-five thousand were reduced by this process, the cost to the city being about \$1 a ton. In New York the cost was less than 60 cents, in Philadelphia \$2. The variation in the cost to the city in these instances, and the general offensiveness of the processes indicate that they are still in the experimental stage. It has usually been found necessary to locate the plants at some distance from the community (Chapin, "Municipal Sanitation," Providence, 1900).

¹ Bridgeport, Connecticut, Camden, Dayton, Ft. Wayne, Joliet, Lafayette, Louisville, McKeesport, Memphis, Trenton, Wilmington, Delaware, and York, Pennsylvania, use crematories. There is no uniformity of cost which ranges from 34 cents per ton in Atlanta to 80 cents in Dayton; in the latter city, however, there is included much night soil. It is almost impossible to make any satisfactory comparison of these crematories without more accurate statistics as to the ingredients of the garbage. In some cases the plant seems to be inoffensive, but in others it is as objectionable as the reduction plants.

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paved city might not enjoy such economy as is observed in Shoreditch, London, where the household refuse in the Dust Destructor and Electric Lighting Station consumes itself without the need of fuel, and at the same time furnishes light for the community and heat for the public baths, laundry, and library.

Not all of the cities of the country have as yet come to a realization of the necessity of an absolute separation of ashes and garbage in order to secure satisfactory results. The chief offender among these backward cities is Chicago, which is now making the effort to secure such separation, but as this is only accomplished (when people are inexperienced in it) by the pressure of an exceptionally efficient administration, the prospects are not encouraging.¹

Great advances have been made in recent years in the provision of gas and electric lighting by municipalities, the most important recent examples being in the domain of electric light. This is easily explained by the fact that the tendency

¹ Among other cities which make no effort at such separation are New Orleans, Louisville, Nashville, Camden, New Jersey, Charleston, South Carolina, Savannah, San Antonio, and Mobile. Cities in which the householders are still expected to dispose of the ashes are St. Louis, Cleveland, San Francisco, Pittsburg, Washington, Minneapolis, Providence, Indianapolis, Kansas City, Denver, Toledo, and Allegheny. Householders dispose of garbage in Duluth, San Francisco, Minneapolis, Denver, St. Joseph, Missouri, Omaha, Nebraska, Albany, and Seattle. (Bulletin of Labor, September, 1901.)

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toward municipal ownership was much more vigorous at the time of the introduction of electricity. The public ownership of gas plants has usually been the result of the purchase of some private plant, whereas the cities have often inaugurated their electric lighting systems. According to Dr. Edward W. Bemis¹: "A comparison of the charges made by municipal electric lighting plants and those conducted by private enterprise is very favorable to the former," although the problem is greatly complicated by the wretched bookkeeping of the municipalities and the misrepresentations or secrecy of the companies. The largest plant in the country is that of Chicago, which has over \$2,000,000 invested, and, although the service was at first as costly as that of private plants, the operating expenses were reduced from about \$100 to \$60 per arc light in 1900, when coal was unusually expensive, while the inclusion of interest and depreciation and such taxes as a company would pay would still leave the cost about \$90. This year a contract is being let with a private company to supply a portion of Chicago, beyond the reach of the municipal system where overhead wires are used, and for this service the city must pay \$106 a light. In the area fed by conduits \$130 to \$175 is paid.

As indicating the possibilities of economical lighting, it may be noted that Allegheny provides

¹ "Municipal Monopolies," chap. viii.

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itself with public street lights for \$72 each, whereas Pittsburg buys its electricity from a private company, paying \$96 a year. The fluctuations of the charges of private plants are themselves sufficient indication that the people get what they demand and no more. They also serve to equip citizens and officials with data which may be used in determining the reasonableness of electric lighting charges.¹

The character of the lighting will depend of course on the demands of the city and the standard of the people, whether it be furnished by a municipal or private plant. The city of Philadelphia is probably the best lighted city in the country to-day, having a larger proportion of arc lights than any other city, over 9,000 as compared with fewer than 6,000 in Chicago and fewer than 12,000 in New York. Philadelphia has many small courts and passageways which need lighting for the protection of their inhabitants and others, and these are all provided for, the larger ones with arc lights and the smaller ones with gas jets. The lighting of New York is more spectacular, Broadway above Fourteenth Street being probably the most brilliantly illuminated thoroughfare in the world. Certainly there is nothing to compare with it,

¹ The following are some of the rates for arc lights per annum : Utica, \$124.10 ; Kansas City, Missouri, \$110 ; St. Louis, \$98.56 ; San Antonio, \$90 ; Allentown, Pennsylvania, \$84 ; Toledo, \$83 ; Rochester, \$81.50 ; Columbus, \$73.50 ; Norfolk, \$58 ; Spokane, \$48.

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in candle power at least, in Paris or London. The smaller cities of the country are frequently lighted by electricity instead of gas, and in many instances the use of incandescent electric lights is common. Cities as widely separated as Spokane and Syracuse use no gas for public lighting. Among the larger cities incandescent electric lights are only in general use in New York, St. Louis, and Providence. Some of the smaller cities, and occasionally as large a city as Detroit, will use electric light towers to effect an economy of arc lights. These throw a very bright light for a considerable distance, but of course have their usefulness diminished by the shadows of high buildings and of trees. Many smaller cities have the efficiency of their lighting system at a lower level equally interfered with by well-shaded streets, which is one of the causes of the frequent use of incandescent lights, which hang still nearer the street.

The problem of public lighting has been complicated, while at the same time being made more economical by the competition of various illuminants. This competition protects the cities often against the extortions of a gas or electric light plant and also gives the opportunity for varying the light in relation to the needs of special districts. In Philadelphia, especially, and to a less extent in Chicago, vapor lamps are used, and, with the development of the Welsbach and other incandescent burners, a very successful light is thus adapted to

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the needs of suburban districts. The incandescent gas light is finding more favor, even in competition with electric light, St. Louis having over 9000 of them, Boston over 8000, and Baltimore over 6000, in each case a larger number than the total of all the other kinds of lights. New York, although having a smaller proportion, nevertheless boasts of over 7000 Welsbach gas lamps.

The chief authority on gas lighting in this country, Dr. Edward W. Bemis, says that all the municipal gas plants are succeeding. The oldest municipally owned and operated gas plant in the United States is at Richmond, Virginia, which before 1885 had more than paid for its works out of its net earnings. Since then the price of gas has been reduced from \$1.50 to \$1 per thousand, and all extensions of the system have been paid for out of the receipts. The city treasury has been enriched by \$342,000, and over \$500,000 worth of free gas has been consumed on the streets and in the public buildings.

As the result of a prolonged dispute and legal action in Chicago, the People's Gas Light and Coke Company issued a statement to its patrons in 1900, giving statistics to prove that Chicago was receiving more and better gas for the price paid than any other city in the country. The figures were very convincing until they were compared with the facts, when it was found that this statement had carefully excluded any cities which would make an unfavorable comparison. At that time Chicagoans

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were paying \$1 net for illuminating gas on one side of the city and forty cents on another side, where temporary competition gave them an advantage. Since then the larger gas company has apparently absorbed the other by making a suspicious looking agreement to buy it out forty or fifty years hence, so that the price is uniformly \$1 all over the city.¹ In opposition to the company's statement it may be noted that in Cleveland the cost of gas is 75 cents per thousand net, as it is in Cincinnati, Ohio, and Wheeling, West Virginia; in Hamilton, Ohio, 80 cents, as it is to some consumers in Milwaukee and Grand Rapids; 85 cents in Dayton and 95 cents in Toledo. In Cleveland the company also pays $6\frac{1}{2}$ per cent to the city treasury. The ease with which gas companies can furnish gas for 75 cents is also illustrated by Cleveland where over a year ago the price was reduced from 80 to 75 cents in return for a ten years' extension of the franchise, and this was considered so slight a concession that it is claimed doubtful methods were used to secure the franchise. What the company could do under pressure was shown by their willingness to furnish gas for 60 cents if a Natural Gas Company were not given a franchise in 1902.

The gain to the public, however, is going to come not only from economies of municipal ownership or the competition of different plants, but also, and

¹ In August of this year the courts confirmed the validity of a law giving Chicago seventy-five cent gas.

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perhaps chiefly, from the competition of the different illuminants. This may then encourage the consumption of gas to the same degree that municipal ownership has increased it in Great Britain, where over 100,000,000,000 cubic feet are consumed by half the number of people that consume 50,000,000,000 in this country. Already such influences have shown their effect in the cities of Ohio in contrast with the otherwise well-regulated Massachusetts cities. Whether due to the prevalence of coal or natural gas, or to the incentive furnished by municipal gas and electric light plants, the majority of instances of cheap illuminating gas come from Ohio. Tiffin is struggling to enforce an ordinance limiting the price of gas to 50 cents a thousand cubic feet. The company has the case before the courts, and is indirectly enjoying the fruits of a partial victory by charging 25 cents a month meter rental.

One cannot, it seems, leave the subject of lighting without reference to the experience of the Philadelphia gas works, which, as is well known, were owned and operated by the public authorities for fifty-six years, and then, recently, leased to a private company. Paradoxically, it furnishes one of the best arguments for municipal operation in the country. During that over half century of public operation the Philadelphia gas plant was the foot-ball of politics and was purposely a case of arrested development. Yet in spite of gross mismanagement, gas was being sold during all that

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period more cheaply in Philadelphia than in New York, Brooklyn, or Washington, while the city was paying for the plant instead of giving excessive dividends to investors and promoters, and was at the same time securing the incidental conveniences which come from public lighting. In 1894 the price of gas was reduced to \$1, which was declared before the New York legislature of 1897 by the Vanderbilt, Russell Sage, and Standard Oil representatives to be a prohibitive price. The circumstances of the leasing of the Philadelphia gas plant, so far from indicating the failure of municipal operation in that city, proved the necessity of the public control of the other municipal monopolies. The same methods which were used to wreck the gas-works were used in vain to shatter the public faith in their waterworks. The conspiracy of the great private interests of Philadelphia against the municipal government will not be destroyed by yielding all the public services into the hands of the conspirators. Meanwhile, on the statement of one of the sympathetic gas monopolies of the country, the people of Philadelphia are paying less for gas under this shameful arrangement than the inhabitants of New York, Baltimore, Jersey City, San Francisco, Washington, Minneapolis, Providence, and Louisville.

What was said in the beginning of the chapter about the fundamental importance of the streets in municipal affairs, and the consequent widespread limitation of the department of public works to

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those public activities pursued in, under, or above the highway, may indicate why the opposition to the extension of municipal ownership is proving ineffective where these functions are involved. Their fundamental necessity is grasped by the popular mind, and the danger of intrusting the satisfaction of such social wants to private enterprise is rapidly being appreciated. Whatever may be the subsequent limits set to the domain of public control, there is now a popular support given to the performance of these economic functions by the municipality.

CHAPTER IV

SANITATION

It is not easy to decide what is the correct test of a city's healthfulness. If we take the death-rate, we find that there is no proper basis of comparison with the rural death-rate, because of the lower proportion of infants and old people in the city. If we try to compare individual cities, we discover that those best provided with curative agencies, such as hospitals, or even with such a fundamental source of health as a good climate, are burdened with a number of invalids who should be charged to other communities. Marion, Iowa, claimed the lowest death-rate in the country last year, 1.5 in the thousand. Its larger neighbor, Cedar Rapids, however, points out that the relief afforded to the former city by the hospital provision of the latter explains this phenomenal record. In the year 1901 Chicago had 510 deaths from typhoid fever; but of these cases 18 per cent were non-residents or others who contracted the fever outside the city. Twenty-two hundred permits were issued for the removal of bodies to other places for burial, "the majority of these being non-

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residents who came to the city for treatment in hospitals."¹

Given these variable elements, the question then arises, What are the sources of death, or, on the other hand, of the prolongation of life in the various cities? Chicago, built on a marsh, with over half its population living in the undesirable and congested river wards, with until recently, and to a certain extent still, a polluted water supply, its population living in an atmosphere charged with smoke,—nevertheless enjoys the lowest death-rate of the great cities of the world, and ranks twelfth in this country among the thirty-eight cities with a population of one hundred thousand or more, the largest cities with a lower death-rate being Buffalo and Cleveland, according to the census of 1900. The year 1901 was a particularly favorable one for Chicago, and the comparison made by the city health department at the close of the year gives the death-rate as 13.8 per thousand, compared with 17.5 for St. Louis, 18.4 for Philadelphia, 19.8 for Boston (figures furnished by the respective health departments). According to the reports of the cities of over thirty thousand population made to the federal government last year, Seattle led with a death-rate of 7.43, while St. Joseph, Missouri, came next, and was the first of the cities having one hundred thousand population, with a death-rate of 8.2.

A geographical comparison of the cities with a

¹ Report of Health Commissioner, 1902.

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population of thirty thousand or more indicates that low death-rates prevail in the north and northwest. The highest death-rates are in the south, chiefly, though not wholly, due to the presence of large negro populations, but high death-rates are found also among the industrial populations on the Atlantic seaboard. This would seem to indicate the significance of climate and well-distributed populations on the health of communities, although it must be recognized that the western cities have a great advantage from the standpoint of vital statistics in the smaller number of old people resident in them. The average age of the population is much higher in the east. Other things being equal, the presence of a large body of water will of course raise the life values of a community. The cities on the Great Lakes all enjoy low death-rates, ranging among the cities having over one hundred thousand population, from 13.47 in Milwaukee to 15.89 in Detroit, whereas the large Ohio River and Mississippi River cities have higher death-rates, with the exception of St. Paul and Minneapolis. The statistics do not enable us to determine what part is played by wide streets, and abundance of shade trees, boulevards, parks, facilities for bathing and recreation, although their advantages are indisputable, if not capable of measurement. There is evidence enough in the reduction of the death-rate in European cities or in the older cities of our own country, or more recently in Cuba, to demonstrate the advantage of

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the application of that fundamental formula of sanitary science, "the return to nature." Whatever virtue may be found in disinfectants and germicides, fumigation and filtration, they are not comparable to the great preventives — fresh air, sunshine, and pure water.

According to the Chicago commissioner of health: "Frequent explanations of the causes of this diminishing mortality, not only among the young but at all ages under sixty years, have been offered in the publications of the department and in the columns of the daily press. Chief of these, as to child life, are the antitoxin treatment of diphtheria; a steadily improving quality of the milk supply; medical inspection of the public schools; midsummer work in the overcrowded and unsanitary tenement districts; the spread and growth of knowledge on the part of mothers as to the hygiene, care, and nursing of the young; the labors of visiting nurses' associations, commons and settlements, women's clubs, and similar organizations."

When it is remembered that a reduction in the death-rate of one in a thousand saves as many inhabitants as there are thousands of the population, and that the precautions which may be taken to-day to prevent deaths from such diseases as smallpox, typhoid fever, and diphtheria, to mention only three, may save some of the most useful members of the community, it becomes increasingly important to secure such medical inspection and enforcement of sanitary laws as will save the unnecessary deaths.

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The variations in the death-rate, in cities of equal population, are astonishing and deplorable, as the following table will indicate:—

CITY	POPULATION (U.S. Census of 1900)	DEATH- RATE (1900)
Chicago	1,698,575	14.68
Philadelphia	1,293,697	19.38
Kansas City, Mo.	163,753	15.77
St. Paul	163,065	10.66
Rochester	163,608	14.37
Nashville	80,865	22.28
Seattle	80,671	9.71
Harrisburg	50,167	15.09
Portland, Me.	50,145	19.60
South Bend	35,999	17.64
Salem, Mass.	35,956	20.53
Johnstown, Pa.	35,936	20.79
Montgomery, Ala.	30,346	11.57
Auburn, N.Y.	30,345	17.14

Among the chief means of improving the public health may be mentioned street cleaning, garbage disposal, the housing of the people, involving the inspection of dwellings, lodging-houses, workshops, and public buildings, a pure and abundant water supply, drainage and sewerage, scientific food inspection, smoke consumption, and the provision of public baths, parks, and playgrounds.

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One of the first public health problems is the housing of the people. This is generally overlooked in American cities, because in the younger communities it seems to be accomplished almost automatically. As the population grows denser, there arise not only the difficulties due to unsanitary houses, but the actual impossibility sometimes of putting roofs over the heads of the people in the districts where they ought to live, and their consequent crowding into quarters not only insufficient, but frequently not even designed for residence. In European cities this has become a municipal problem in the positive sense that the population is, in part, rehoused by the municipality. In American cities public control is limited to inspection by the board of health, regulation of water supply, drainage, lighting, and fire protection, and condemnation of the absolutely hopeless houses, except in New York where a tenement house department is included in the revised charter, and the appointment by Mayor Low of Mr. Robert W. de Forrest at the head insures the most advanced steps yet taken in an American municipality. The day of better housing seems to be dawning, as evidenced not only by this New York tenement house department and by private endeavors to provide model tenements and investigate the housing question, as has been done in Boston, New York, Philadelphia, Washington, and Chicago, but also by the federal investigations of the slums of great cities and the beginnings of municipal housing through the ele-

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mentary experiment of lodging-houses.¹ The most successful attempt has been made at Syracuse, where the lodgers have given service in return for the city's hospitality, and the lodging-house has become a clearing house instead of a refuge for tramps. The superintendent, Mr. John Hazeltine, says in his report for 1900: "The number of night lodgers was 6724, and the number of persons who worked an hour for a meal alone was 946. Together these worked on the streets 27,842 hours, which, at the regular pay for 8 hours' work a day, was \$5220.36 which the lodgers earned for the city. Adding to this the \$621.75 received from the county, and the \$376.35 yet to be paid, makes the total earnings of the Municipal Lodging House \$6218.46, or \$151.98 more than expenses."

The first considerations in the location of a new community are usually good water supply and drainage. American cities are frequently more generous about the quantity of water supplied than they are particular about the quality. Unless meters are introduced there is great waste of water leading to an expenditure of public funds which might much better be devoted to purifying the supply.² The progressive increase in the consump-

¹ These exist now in New York, Philadelphia, Boston, St. Louis, Washington, New Haven, Syracuse, and Chicago.

² The variations in the daily per capita supply may be indicated by the amounts furnished by the following cities: Fall River, 35 gallons; Rochester, 83; Baltimore, 90; New York, 103; St. Louis, 105; Allentown, 135; Cleveland, 140; Norfolk, 152; Chi-

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tion of water, as the urban populations grow, makes the introduction of meters imperative. A city cannot afford, as a rule, to purify the amount of water which is commonly wasted in American cities. Meters reduce the cost both to the community and to the individual, lead to the introduction of water supplies into small cities and the outlying regions of large cities, and simplify the problem of sewage disposal by reducing the amount of sewage. As the community grows the provision of water becomes increasingly difficult, especially in those cases where drainage threatens the water supply.

The best illustration in this country is provided by Chicago, as it has, in the first instance, the easiest access to an unlimited supply of pure water of any metropolitan city of the world. Not only is there an inexhaustible reservoir at hand, but the city lies so low that difficulties of pumping are reduced to a minimum, although the extent of the area of the city somewhat neutralizes this advantage. In spite of this supreme position, the inadequacy of Chicago's natural drainage and its unexpectedly rapid growth led to such an abuse in the pollution of its own water supply as to require as great an investment in the disposition of its sewage as other cities less advantageously situated must submit to in the provision of a water supply.

When the old individual wells became polluted by the growth of the city's wastes, a new enter-
cago, 160; Washington, 173; Philadelphia, 185; Buffalo and
Pittsburg, 233.

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prise was created, that of hauling water from the lake and selling to the inhabitants. In 1834 the village council appropriated \$95.50 for digging a public well. This supplied only a little colony on the north side, and the demand of the residents of the south side was so great that the individual water carts and owners were supplanted by a company. Pipes were extended into the lake for five hundred feet, and water was pumped into a tank with a capacity of five to six hundred barrels. This predecessor of the modern water system supplied so small a part of the population that four-fifths of the people are said to have drawn their water for domestic use from the river or to have bought it from the water-cart purveyors. In 1854 the city opened its own waterworks. The water was taken from an inlet basin on the lake shore and pumped into a reservoir on each side of the city. In 1864 a tunnel was extended into the lake for a distance of two miles, giving the first adequate provision for a water supply. This had to be renewed after the fire of 1871, and since then has grown rapidly to the present enormous system, which includes five "cribs" in the lake, at distances of from two to four miles from the shore, and ten pumping stations which supply about 160 gallons per capita, their total capacity being 528,850,000 gallons.

Each successive water system endeavored to reach out into the lake beyond the area polluted by the city's sewage, but the sewers had been constructed from the earliest time to reach the nearest outlet,

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whether river or lake, and consequently there were a large number of sources of pollution and the fluctuation of the water, due chiefly to the wind, made it possible to prevent the growing mass of sewage from reaching the cribs. Although the water was drawn from a point seventy or eighty feet below the surface of the lake, the supply was polluted during all storms and often at other times.

The first system of sewerage in Chicago was provided in 1855. Up to that time the city's only artificial device for drainage was in submerged wooden boxes on a few of the principal streets. These failed to carry away the surface water in time of rain, and as a result the city experienced successive epidemics, the death-rate becoming the highest in the country. For the six years between 1849 and 1854 the death-rate was 48.92 per thousand, in 1854 reaching the enormous figure of 53.9. The construction of sewers was not only of direct advantage to Chicago, but was indirectly profitable by necessitating the raising of the city's datum. The original surveys for the sewerage system indicated that the surface of the ground in the vicinity of the river was only three or four feet above the surface of the lake. On the west it reached a level of ten or twelve feet at Ashland Avenue. It was necessary, therefore, to raise the grade of the streets in order to keep the sewers underground. For years some of the sewers were partially above ground, even in the business dis-

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trict of the city, as they are still in some of the suburban districts.

At that time Chicago had the good fortune to possess in the person of the city engineer, Mr. E. S. Chesbrough, an experienced and far-sighted public official. He saw that it would become necessary to create an outlet to the southwest, but as that seemed impossible, he was sent by the sewerage commissioners to Europe in 1856 to investigate the sewerage methods there. Mr. Chesbrough's investigation of the chief cities of western Europe led to the reorganization of Chicago's sewerage system which ultimately resulted in the drainage canal project, and was of great influence on the other cities of the country, none of which at that time had any system worthy of the name.

With the continued increase of Chicago's population it became evident that the sewage must be diverted from the lake, and happily there was a natural course which it could follow. The idea of turning the waters of Lake Michigan into the Chicago River and thence through the Desplaines, Illinois, and Mississippi rivers into the Gulf of Mexico is not so revolutionary as it seems at first sight. In the last glacial age the lake doubtless did drain in that direction, and in 1674 the great western pioneer, Joliet, said: "We can quite easily go to Florida in boats by very good navigation. There would be but one canal to make, by cutting only one-half a league of prairie, to pass

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from the lake of the Illinois into the St. Louis River.”¹

Had it not been for the lingering ideal of a ship canal from Lake Michigan to the Gulf of Mexico, there would have been some other disposition of Chicago's sewage. At the time when it was decided to construct the drainage canal, a proposition was made by a Chicago engineer, and supported by many prominent citizens, to dig a tunnel from Chicago to Joliet, which would have given Chicago a low-level drainage system that by the aid of gravity would have disposed of the sewage problem with very much greater economy. Even this plan would have been inferior to a system of sewage treatment, which will inevitably come as the volume of Chicago's sewage becomes greater and the dangers of navigation are increased by the current in the river. The dream, however, of inland navigation, which will without doubt be realized, gave the sanction to the idea of a drainage canal. The legislature created the sanitary district of Chicago, a special taxing body, with power to coördinate the drainage areas of Chicago, to turn the water of Lake Michigan into the canal which should be constructed, and to make connection with the Desplaines River. The pumping works at Bridgeport were enlarged, the Desplaines River was diverted for several miles, locks were constructed at Lockport, thirty-three miles from Chicago, and an

¹ Brown, “Drainage Channel and Waterway,” p. 11.

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aqueduct built at Joliet, thirty-seven miles from Chicago.

The results have been the purification of certain portions of the water supply to such an extent that in 1900 there was recorded the lowest number of deaths from typhoid since 1870, and the lowest typhoid death-rate ever known in the city. Other sources are still contaminated by the large residential suburb of Evanston and the great manufacturing region of South Chicago, thus demonstrating the necessity for enlarging the sanitary district and perfecting the work. The sewage of 84 per cent of the population now flows into the drainage canal; of 10 per cent directly into the lake, and of 4 per cent into the Calumet River. This last element, owing to the industries of South Chicago, is especially offensive and pollutes the water supply of 20 per cent of the people of Chicago. Another serious result has been the antagonism of St. Louis and intermediate cities to a scheme which seemed to threaten the pollution of the Illinois and Mississippi rivers. A careful bacteriological investigation by the trustees of the sanitary district, under the direction of Professor Jordan of the University of Chicago, seems to exonerate Chicago from this charge, as the effects of Chicago's sewage are not seen for a great distance down the Illinois River, and, in any case, St. Louis draws its water supply from the waters of the Missouri, which remain separated from those of the Mississippi.

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None the less, the problem of Chicago's sewage disposal is not yet solved, and there is reason to believe the additional cost of disposing of the solid matters in the sewage could be met by their separation through familiar processes and sale as fertilizing materials.

The difficulties which other cities meet in securing a water supply may be illustrated by the experience of New York. In 1832 New York City instituted measures to secure the Croton watersheds. The Croton aqueduct, which was subsequently built, carried the water a distance of forty miles, and up to 1884 had involved the city in an expense for construction of \$37,000,000, providing a supply of 90,000,000 gallons daily. This sum included the cost of the Harlem High Bridge, which carries the water over the Harlem River, and the reservoir at Forty-second Street and Fifth Avenue, which has now had to be abandoned, and becomes the site of the public library. In 1885 it was necessary to start the building of the new aqueduct, which began to supply the city with water in 1890, and has a maximum capacity of 290,000,000 gallons daily, involving an expense of \$24,000,000. This larger supply is brought to Manhattan in a fourteen-foot tunnel at an average depth of 150 feet, passing under the Harlem River at a depth of 300 feet below the river-bed. Since 1890 another budget of \$24,000,000 has been necessary to provide extensions and reservoirs. An enormous dam is being constructed 1350 feet long,

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227 feet high, and 216 feet wide at the base. Meanwhile, the rate of profit has been advancing, so that much of this expense for construction has been paid for, no less, in fact, than 57 per cent of this last amount. Manhattan Island has had an excellent supply of water from the Croton and subsidiary systems; the only difficulty has been the rapid growth of population, necessitating continual extensions, which is now further complicated by the need for supplying Greater New York, the other boroughs being less favorably situated than Manhattan. Brooklyn has a very imperfect supply from Long Island, and has reached the limit of its powers, which have been severely restricted through the opposition of rural legislators.

In order to take advantage of New York's necessities, the Ramapo Water Company secured control of large watersheds in New York and New Jersey, in the natural region for New York's next extension. On August 6, 1899, the commissioner of water supply, Mr. William Dalton, presented to the board of public improvements a proposed contract between the city and the Ramapo Water Company. This contract would have involved the city in the payment of \$70 per 1,000,000 gallons of water, for a period of forty years, as well as the necessity of buying what they needed from this company to the amount of 200,000,000 gallons a day. A majority of the members present at the board meeting informally indicated their approval of the contract.

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The knowledge of this action aroused Comptroller Coler and many citizens of New York, notably the members of the Merchants' Association. Mr. Coler contended that the finances of the city were adequate to the construction of new waterworks. The investigations instituted on the one hand by the comptroller, and on the other by the Merchants' Association, demonstrated the impossibility of the Ramapo Company meeting the needs of New York for the period of the contract, the possibility of New York's undertaking to supply its own needs, and the great simplification of the problem which would result from a reduction of the enormous waste of water.

One great benefit which the city has derived from the probing of this sandbagging scheme has been the revelation of the amount of water wasted. Mr. Freeman, the hydraulic engineer who investigated the subject under the direction of Mr. Coler, showed that the average per capita consumption in the boroughs of Manhattan and the Bronx was 116 gallons a day, of which 70 gallons were wasted.

The Merchants' Association undertook an investigation of the water supply of New York, which has proved to be one of the most valuable and public-spirited enterprises ever carried through by a private body in this country. They examined the history of New York's water supply; the various possibilities of increase through private and public sources; the possible uses of the water; the question of waste; salt water for fire protection, street

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washing, and sewer cleansing; the legal relations of the city and State; and finally the immense advantage of municipal ownership as contrasted with any other method.

As the result of this elaborate inquiry it now seems necessary to seek a supply in the Catskills or Adirondacks, there being no prospect that the future needs of this great urban population can be met by sources nearer at hand. This may involve the construction of an aqueduct two hundred miles long, but with the extensions possible when that main aqueduct is constructed, there will virtually be accessible an unlimited supply, which will be brought to the city by gravity.

The Massachusetts State Board of Health, under acts of 1893, investigated the water supply of Boston and its suburbs within a radius of ten miles. The Metropolitan Water Commission, which was subsequently established, comprehended twenty-eight cities and towns, with a population in 1890 of 848,012. One quarter of the population of the region was left out, including such large places as Cambridge and Brookline, which were content with their water supplies. They were given the privilege of entering later, as a number of the towns have done. It was found that the most available source for increasing this supply was in the watershed of the Nashua River, and fortunately the Boston conduit to the Sudbury River was large enough to accommodate 50,000,000 gallons more. One of the difficulties, which was finally happily sur-

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mounted, as will be described in the concluding chapter, was the necessity of appropriating for the reservoirs much of the area of the villages of Boylston and West Boylston. It is already necessary, however, for this growing metropolitan district to look farther ahead for fresh water supplies, and the Massachusetts State Board of Health has presented a report of its investigations into alternative sources ranging over territory in western Massachusetts, New Hampshire, and Vermont.

Among the small cities which have accomplished a similar work of prevision and provision is St. Paul, which controls a chain of lakes, kept free from pollution, as are the waterways of the Boston district, and adequate for many years to come.

A significant result of the investigations into the water supplies of New York, Boston, and other cities of late years, has been the increase in the amount of salt water used by seaport cities for fire protection and street sprinkling. These inquiries have also brought to light the fact that there is already a very extensive use of salt water abroad and on the Pacific Coast. This is no new device, but is commonly not appreciated where a large supply of fresh water is available. Fifteen years ago salt water was largely used in Cambridge for street sprinkling, where it was considered more efficacious than fresh water, but its use was discontinued when the metropolitan system was introduced, giving them a more economical fresh water supply. The same change was made in Boston in 1891 when

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the sources of fresh water were enlarged. A plan is under consideration in San Francisco to increase the use of salt water, which has been sprinkled on some macadamized streets with great success. It is only the small number of hydrants which prevents its immediate extension.¹

Salt water has also been used with great satisfaction by the cities of Coronado and Alameda, California, and its introduction is being considered in San Diego and Oakland.

¹ Superintendent King of that city gives the following advantages of salt water sprinkling over the use of fresh water : —

“ First. — It binds the dirt together between the paving stones so when dry there is no loose dust to be raised by the winds.

“ Second. — It does not dry so quickly as fresh water, and it is claimed in those cities which use salt water that one load is equal to three of fresh water.

“ Third. — The salt which is deposited on the street absorbs moisture during the night, so that during the early morning the street is thoroughly moist and has the appearance of being freshly sprinkled. This effectually prevents a dust being raised by the wind or a street sweeper before the regular sprinkling carts can get over the ground in the morning, and thus overcomes one of the great nuisances.

“ Fourth. — It is more healthful than fresh water for the reason that salt water will destroy many disease germs now contained in the dirt on our streets.

“ The above advantages are particularly noticeable on a portion of Market Street, where the north side and centre of the street between the tracks are sprinkled with salt water, while the south side is sprinkled with fresh water. Along the north side and centre the dirt is compactly bound together, is always moist between the stones so there is never any dust raised there, and during the early morning that portion appears as though partly sprinkled. The business men along that portion of the street should observe and compare the two sides of the street.”

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The dust nuisance is not yet fully appreciated by American citizens. It is not simply a question of comfort, but a vital hygienic problem. Disease germs are carried by the wind from the dirty streets into the houses. The serious succession of deaths from tetanus in Camden, New Jersey, is traced now not to bad virus used in vaccination, but to the infection which reached the wounds of careless children through dust, chiefly of street sweepings, as horses and human beings are the only animals susceptible to the disease. The consequences of this calamity were not confined to the immediate victims. The sensational reports spread by the daily press led to a reaction against vaccination, which has resulted in deaths from smallpox all over the country.

The water supplies drawn from rivers usually present the difficulty of pollution. The federal government has made several significant investigations, and action has been taken by some states looking to the prevention of the pollution of the water supplies. Ohio has attempted a regulation of this abuse, and New Jersey has appointed a commission to investigate it. If it were not for the danger of infringing state rights, there would doubtless have been national legislation ere this.

Curiously enough, one of the most unfortunate cities is Washington, and serious efforts are being made now to prevent pollution of the Potomac and its tributaries, partly as a result of the findings of the commission on the sewage of Washington em-

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bodied in an important document, and partly owing to the conclusions of the admirable reports of the committee on Public Health and National Quarantine and that on River Pollutions.

One of the most unhappily situated cities is Philadelphia, which has owned its waterworks for a great many years, but which has only recently begun the erection of a filter plant. This improvement, which has thus far cost \$2,500,000, will, for the present, only satisfy the needs of the suburban districts of Manayunk and Germantown. The water is to be pumped into the old Roxborough reservoir, with a capacity of 12,000,000 gallons. From this it will run by gravity upon the filter beds and thence into filtered water basins. The capacity of the plant is 6,000,000 gallons, which will provide a very small proportion of Philadelphia's water. Dr. Edward W. Bemis made an investigation into Philadelphia's needs, which resulted in an appropriation of \$12,000,000 for a filter plant, much more than it need have cost if his recommendation of meters had been adopted. This improvement, however, is most encouraging in view of the past criminal neglect of their public water system, due to the influence of private parties, who were endeavoring to deprive the city of its water-works, as they had of its gas-works. In endeavoring to carry out this plot no effort was made for many years to purify the supply, with the consequence that the typhoid death-rate was excessively high in Philadelphia. There has been scarcely any

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attack upon municipal government which has had such immediately frightful consequences as this "slaughter of the innocents" in Philadelphia.

Baltimore, which has had such a bad reputation on account of the absence of a sewerage system, has an ample supply of inferior water, brought by a tunnel, seven miles long, from the eight reservoirs having a daily capacity of 300,000,000 gallons.

The cities along the Ohio, Mississippi, and Missouri rivers are nearly all agitated over the subject of filtration, the question in some cases, as for example in St. Louis, being largely one of the precipitation of sediment which is attempted by that city and Kansas City, Missouri, in settling basins. Along the Ohio River, Louisville and Cincinnati have set an example to the other cities by making a thorough investigation of the problem of filtration, and they are now introducing filter plants. The filtration commission of Pittsburg made a report four years ago, which is now being acted on, and a system of filtration is expected to be installed by the middle of 1903.

One of the successful filter plants is that operated by the water company at Davenport, Iowa, which enjoys the advantage, however, of taking its supply from the rapids above the city. Across the river, the public filter plant of Rock Island is proving unsuccessful, chiefly because of the imperfect construction due to false economy.

The largest slow sand filter in the United States is at Albany. The water of Hudson River is here

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filtered by the English system (so called originally by the manufacturers of mechanical filters, who appeal to the jingo spirit to bring slow filters into disrepute), being raised to a reservoir from which it falls through pipes to the eight filter beds, seven of which are usually in operation at one time. The whole area is roofed with concrete arches, covered with two feet of earth, and grassed over to protect the filters from freezing, a protection which is not generally taken in the other natural filters of the country. Successive layers of gravel and sand then provide the means of a slow filtration, through a total depth of about five feet, yielding three million gallons of water per acre in twenty-four hours.

The most immediate success was achieved at Albany in the reduction of typhoid cases. In the autumn of 1900 typhoid fever was unusually prevalent in New York State, causing 1948 deaths, 350 above the average. In Albany the average yearly deaths from typhoid for 10 years had been 84. In 1900, the number fell to 39, and of these 39 it was claimed that 14 were imported cases for which the city's condition was not responsible.

The popular American type of filter is the mechanical, which requires much less space and is more expeditious in its action. The city of Elmira furnishes an example.¹

¹ According to James M. Caird, the chemist in charge : "On examining the polluting territory of the river for a distance of 50 miles above Elmira, there will be found to be over 50,000 people in cities and villages, and over 15,000 people having direct sewage

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These mechanical filters are in use in a score or more of the cities of the country, but almost exclusively in the smaller cities, the larger communities, in fact, not having introduced filters of any kind until quite recently, although the typhoid fever death-rate has run up to 300 per 100,000 and more, in cities using polluted water supplies, like Philadelphia, Pittsburg, and Cincinnati; whereas cities using impounded surface waters have an annual typhoid death-rate of 30 or less, and pure filtered supplies will reduce this to about 6 in the 100,000 of population.¹ Mayor E. S. Brown asserts

connections with the river. The water always has a marked turbidity and carries heavy suspended matter. The water is forced through a 20-inch main to the filter plant, which is about 2 miles from the pumping station. The pumps lift the water 118 feet for delivery. The filter plant, which is the American or mechanical type, consists of 18 Jewell subsidence gravity filters, 13½ feet diameter, outside measurement. Each filter has an effective filtering surface of 115 square feet or a total of 2034 square feet, which is equal to about half an acre. The process of filtration is as follows : The water to be filtered is treated with a solution of sulphate of alumina, and then passed to the subsidence basins, where it has about 30 minutes subsidence. The water then passes to the top of the sand, and after passing through the sand it is discharged into the flume, which conducts it to the filtered water, or distributing reservoir. The sand bed is about 48 inches in depth. The sand used comes from Red Wing, Minnesota, and is almost pure silica, the grains being nearly uniform in size and shape. The number of cases of typhoid fever in Elmira for three years before the filter was put in operation was 629 ; the total number of cases during the three years of operation was 284. This makes a reduction of 60 per cent in the total number of cases."

¹ "Proposed Municipal Improvements for Harrisburg," Report of James H. Fuertes, 1902.

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that Mendota is the most healthful city in Illinois. There has not been a death from infectious disease for more than a year, and not a case of diphtheria or typhoid fever for fourteen years. He ascribes Mendota's wonderful health record to its pure water and the city's system of combined sewerage and filter bed systems, together with the pains taken to keep not only the streets and alleys but the creeks in the surrounding neighborhood clean.

The prevention of the pollution of the water supply suggests also the problem of sewage disposal. If this were done properly, there would be commonly no necessity for the filtration of drinking water, although it is of course necessary in dealing with a city's sewage to consider the pollution caused by manufacturing plants. One must note the distinction between drainage and sewerage; the volume of sewage is small as compared with the rain water. The difference is illustrated in the case of the sewage disposal of Memphis. For many years Memphis had suffered from epidemics, until it called in the services of Colonel Waring, who equipped it with what is known as the double sewerage system.¹

¹ "He provided for the carrying off of the rainfall, which, as in tropical regions generally, is very heavy, by surface gutters and drains following the natural declivities of the site to the lagoon, and then constructed a system of cylindrical sewers for the removal of excreta and slop waters only. The houses were effectually disconnected from the drains; the house drains, of 4 inches diameter, were ventilated by pipes carried above the roofs; the street sewers, also cylindrical,

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A scientific system of sewerage must be expeditious, effective, and economical. The sewage must be disposed of every twenty-four hours; it must be made inoffensive to the community and innocuous to other communities. There is then the further consideration that there exist forms of treatment which may bring a return to the city in relief of taxes.

The following methods may be said to be open to modern communities: (1) The simple, primitive device, far from universal as yet, of having one or two outfalls below the city.¹ (2) To prevent the pollution of streams by both organic matters and factory wastes, involving the separation of the sludge to be used as fertilizer. (3) The distribution of sewage on broad areas for redeeming waste

had a caliber of not more than 6 or 8 inches; while a few mains of 12 inches and 1 larger culvert completed the system. Besides the ventilating shafts attached to each house drain, others were provided at every junction, and at the head of every main sewer, 50 in number, where as many of Rogers Field's automatic flushing tanks fed by the waste of drinking fountains, etc., were fixed, discharging at intervals of 6 hours 150 gallons of water in about 5 or 6 minutes, and effectually cleaning out the sewers.

"The cost was incomparably less than that of the ordinary system would have been, and the results so satisfactory, that the example of Memphis is being very widely followed." (Willoughby, "Public Health and Demography," p. 299, Macmillan, 1893.)

¹ San Antonio has 1 outfall 7 miles below the city; Boston has 2 several miles out in the bay; Cleveland has 20; St. Louis, 26; Syracuse has numerous sewer outlets into Onondaga Creek and Haber Brook, but intercepting sewers are about to be built to convey sewage to a point near Onondaga Lake, where disposal works will ultimately be built.

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land. (4) Sewage farming for market gardening or raising cattle. Examples of all these systems may be found in western Europe, but few of them have been introduced into this country,

The most effective protection of streams in the United States is doubtless found in the metropolitan sewerage system of Boston. The first legislation for the protection of Boston was introduced in 1709 and was designed to harmonize the differences between the individual owners of the various sewers and drains. In 1837 the office of superintendent of sewers was established, and the beginning made of the construction of a more uniform system. As a result of the growing appreciation of Boston's abnormal death-rate, which was 30.5 in 1872, the Boston Sewerage Commission was appointed in 1875. At that time cesspools were in general use. There were 125 miles of sewers emptying directly into the bay, and it was not uncommon at high tide for the sewage to back up in the pipes. In 1877 the Moon Island site for discharge was chosen, and from that time to December 31, 1885, over \$5,000,000 were spent on the Boston sewerage system. In 1892 an act was adopted, which endeavors to secure a just form of taxation and a unified sewerage system. In 1897 the legislation was enacted which gave the city council of Boston the right to appropriate a sum not to exceed \$1,000,000 in any one year for the construction of sewerage works. The act also provides that the board of street commissioners, with the approval

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of the mayor, shall have authority to regulate all the natural waterways of the city.

The later acts only facilitate the coöperation of the authorities of Boston with the Metropolitan Sewerage Commissioners. This body provides for the drainage of twenty-two cities and towns in the metropolitan district, including the valleys of the Neponset, Charles, and Mystic rivers. There are three branches of this metropolitan sewerage system. The Charles River system deals with the southern portion of the metropolitan area, ranging from Waltham through the Back Bay district of Boston to the connection with the main Boston system in Huntington Avenue, a length of eight miles. The North Metropolitan system, covering the district indicated by its name, has a total length of nearly fifty miles, requiring four pumping stations and having its outfall at Deer Island. The third branch takes in the Neponset valley, has a length of eleven miles, and discharges into the other outfall. Thus all of the Boston Metropolitan sewage empties at two points into the bay. In this way, while the crude sewage is discharged freely into the sea with little that is objectionable about it, the general system has the immense advantage of dealing with an area of 121 square miles and protecting from pollution all of the many streams within that area.

Among the cities which make some effort to dispose of the ingredients of their sewage may be mentioned Pasadena, which conducts a sewage

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farm, and East Cleveland, which separates the sludge. It is natural that the first American sewage farm on a large scale should be established on the Pacific Coast, where irrigation is such a necessity that waste water is appreciated. There are three hundred acres of land in this farm, which with the building, pipe lines, and other equipment have cost the municipality \$75,000.¹

At East Cleveland filter beds separate the sludge and discharge a purified effluent, which is inoffensive.

Brockton and South Framingham, Massachusetts, have farm irrigation systems of sewage disposal. Worcester formerly discharged crude sewage into the Blackstone River, but the continual complaint of its pollution led to the introduction of a chemical precipitation plant. This provides for

¹ According to the public report, "for the year ending February 28, 1900, the cash received from the products of this farm and paid into the city treasury were as follows:—

From sale of alfalfa hay	\$696.01
From sale of barley hay	620.37
From sale of walnuts	2,984.88
From sale of wood	459.75
From sale of hogs	280.40
From rent of pasture	<u>33.10</u>
Total	\$5,002.51

The operating expenses amounted to \$2,915.02, which left a profit of \$2,087.49 for the year in cash receipts. In addition to this there should be placed to the credit of the farm, for hay furnished to the fire and street cleaning departments, the sum of \$940.41, which runs the total profit of the institution up to \$3,027.90. The net profit is sufficient to pay 4% on the sewer bonds now outstanding."

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the sewage of 80,000 people at a per capita cost of 43 cents, or \$6.30 a million gallons. A large number of towns in Massachusetts adopt the method of intermittent filtration with success, largely as the result of experiments carried on by the State Board of Health at Lawrence.

The most backward of northern cities is Baltimore, which still relies on a system of surface drainage. Open sewers flow through the alleys, and the gutters of the streets are filled with filthy water, which is obviously conducive neither to health nor comfort. The Council of Baltimore authorized investigations into the question of sewage disposal twice before the establishment of the present commission, in 1859 and in 1881, but without result. There had also been an effort to get rid of the offensive streams which flowed through the city, four of them having been arched over and converted into storm water drains, although this still leaves Jones' Falls running through the built-up portion of Baltimore. The difficulty of dredging under the numerous bridges which cross this stream was the cause of a growing offence. When the commission was appointed in 1893 Baltimore already had thirty-three miles of storm water drains which had cost \$4,000,000. The practice prevailed, in spite of repeated efforts to stop it, of tapping the drains for the use of sewage, with the consequence of serious pollution of the harbor. The existence of these drains led the commission to adopt the separate system. The chief objection to

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emptying sewage into the harbor was on account of there being a rise of only sixteen inches with high tide, making it impossible for the sewage to flow out of the harbor.

In 1898 another report was authorized because of the fear of the pollution of the oyster beds, Baltimore's chief native industry. The same three systems were discussed again, which had been investigated in the former instance: (1) the dilution into the waters of the bay, (2) chemical precipitation of the solids and disposal of the effluent into river or bay, (3) filtration on land. Once more the first plan was recommended, with the third as the best alternative proposal. It was claimed that the additional expense did not warrant the last method, as the sewage of Baltimore was less than that already discharged into Chesapeake Bay and the pollution of the oyster beds was a very remote possibility, owing to the enormous power of dilution of the plentiful waters of the bay. The agitation of the Municipal Art Society may result, however, in the adoption of the third plan. The sewerage of the entire city is not expected to be accomplished before 1925, when it will probably have cost over \$10,000,000.

Among the other public health provisions which are far from uniformly supplied to the inhabitants of American municipalities are markets.¹ New York

¹ Cities which make no provision other than occasionally a great open space, are Chicago, San Francisco, Jersey City, Louisville, Minneapolis, and Providence.

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has an investment of over \$8,000,000 in its markets, Boston nearly \$2,000,000, and Baltimore, Cincinnati, and Pittsburg each \$1,000,000, while Newark and Toledo have each an invested amount of \$500,000.

Even where there are not markets a better system of food inspection ought to be provided. This is usually a State function, though it is possible to find two states side by side, like Ohio and Indiana, in which a fairly efficient health commission exists in one and none at all in the other. Some of the cities of Indiana, therefore, make food inspection a municipal function. At its best such inspection of food is usually limited to a supervision of slaughter-houses and dairies; and the existence in many cities, including New York, Chicago, and Philadelphia, of organizations to provide sterilized milk to infants indicates how ineffectual are the present health laws.

A much-needed hygienic reform which also has its æsthetic defence is smoke consumption. Four stages may be observed in American cities, illustrated by Pittsburg, Chicago, Cleveland, and St. Paul. In spite of the temporary relief enjoyed by Pittsburg in the days of an abundant supply of natural gas, it has now become possessed by seven devils worse than the first, through the multiplication of chimneys and under the approval of Pennsylvania's patron saint, "Prosperity." Thus the chief sufferer among American cities from the extravagant and unnecessary luxury of soot does nothing to suppress the nuisance.

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Chicago has had a smoke inspection department which has imposed many fines upon those who obscured the sun needlessly, but has courteously remitted most of these if any objection was made to payment and the offenders promised to mend their ways. This has been done in spite of the fact that many furnaces have been equipped with smoke consumers which are not only effective but economical, and some chimneys emit no excessive smoke merely as the result of good stoking. The pressure of the Municipal Art Society is securing a better enforcement of the existing law and the passage of more stringent legislation.

A step in advance is observable in Cleveland, where the supervising engineer of the bureau of smoke inspection, Professor C. H. Benjamin, has reduced the smoke nuisance by means of persuasion. Through the device of diplomacy he has personally induced many of the manufacturers and proprietors of large buildings to introduce smoke consumers or insist on good stoking on the part of their engineers. It is reported that "in a total of forty modern blocks within a radius of a quarter of a mile in the business centre, more than three-fourths are now provided with smokeless furnaces, and out of a total of something over sixteen hundred boilers in the manufacturing district about six hundred of the furnaces have been fitted with smoke consumers."¹ The still beclouded skies of Cleve-

¹ Walden Fawcett, *Municipal Journal and Engineer*, November, 1901.

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land, however, when compared with the clarified atmosphere of St. Paul, bear testimony to the inferiority of personal solicitation to the rigid enforcement of a general law. The ineffectiveness of a smoke department in the latter city led to the transfer of its functions to the unusually efficient health department, under the masterful hand of Dr. Justus Ohage. This fearless public servant is actually stopping the smoke nuisance in St. Paul. His assistants photograph the offending chimneys of the traction company's plant, the factories and high buildings (including the federal building), and the steam locomotives. These, with frequent observations, are used as evidence, and neither pleas of friendship nor threats of influence awe this faithful official. It has been demonstrated in St. Paul, as in many other cities, that this waste of smoke is uneconomic. Mr. Franklin McVeagh, one of Chicago's leading merchants, told the Manufacturers' Club that his own experience, as well as numerous scientific experiments, supported the contention that smoke was unnecessary and extravagant, in which assertion he has been supported by the public statement of over a score of the chief merchants and manufacturers of Chicago.

Another hygienic abuse which is trifled with, if not ignored, in most cities, is that of expectoration in public places and conveyances. Once more Chicago's experience is typical. The health department several years ago posted notices in the street cars and elsewhere warning people not to

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violate the ordinance, the number and text of which were given, under penalty of arrest and fine. As no one was apprehended and the offence was unabated there shortly appeared a substitute for the former notices which politely requested people not to expectorate as it was injurious to the health and forbidden by law. The genial and undaunted health commissioner still posts these harmless admonitions in spite of the continued indifference of the public. "They do these things differently" in Boston, New York, and St. Paul, to name no other cities. In Boston a fine of \$100 is imposed for the offence, in New York \$500, and it required only a few examples of enforcement to put an end to the filthy practice. With a smaller fine in St. Paul they have been almost as successful through the universally effective method of prompt enforcement, as one might expect under the present health commissioner.

According to Baedeker's "United States": "Public conveniences are not usually provided in American cities, but their place is practically supplied by the lavatories of hotels to which passers-by resort freely. Accommodation is also furnished at railway stations. Such public conveniences as do exist in New York and other large cities are disgracefully inadequate in number, size, and equipment." Underground lavatories have been introduced under the Common, Boston, and City Hall Park, New York, costing the former city \$8000 last year; the Merchants' Association of San

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Francisco expects to secure the installation of one in Union Square in that city, as the Board of Trade does in the Capital Park, Columbus.

The laxity of public health officials in the provision of all the measures necessary for the protection of the public is directly traceable to the ignorance and indifference of the people concerned. The scientific knowledge of to-day, which can predict with such accuracy as to make insurance one of the most profitable of businesses, can save human life and prolong it as soon as a proper estimate is put upon it.¹ The people who will tolerate thousands of deaths by railway accidents annually, when not one passenger or employé lost his life on the state-owned railways of New Zealand last year; who will wink at expectoration in public places, bad plumbing in private houses, and smoke and water pollution everywhere, are not likely to find many self-sacrificing health officials who will brave private and public criticism in the enforcement of old laws and the enactment of new ones. We can enjoy longevity as soon as human life becomes more precious than private property.

¹ Karl Pearson, "The Chances of Death," Vol. 1.

CHAPTER V

PUBLIC SCHOOLS

MODERN methods of education are bringing about a closer relation between the home, the school, and industry. The progressive public school is to be found in many cities of the country, but with the best efforts of to-day the standards still fall far short of those generally accepted by the leading modern teachers. The ideal school will have classes small enough to permit of individual instruction, yet large enough to be democratic ; will adapt the work of the earlier years to the natural experiences of the child gained before entering the school, and the work of the later years toward fitting him for occupation and for citizenship. Even the best of our public school systems fail at the beginning by having too few teachers and too large classes, and at the end by leaving a great gap between the school and occupation. Exceptions must be noted in the first instance in the case of some of the better kindergartens, as well as grades where the kindergarten methods have persisted ; in the second instance, in some of the manual training schools of to-day, which are successful in preparing pupils for occupations.

The chief cause of this failure to provide an ideal

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system of education is lack of funds. While not overlooking the difficulties which come from ignorance and extravagance, it may safely be said that the present ideals of the best educators could not be realized without a vastly increased expenditure. The poor but dishonest municipalities all protest that it is legally impossible to meet the growing demands of the schools. Chicago has just been ~~bring~~⁴ threatened with the closing of its schools, and did actually close its kindergartens, because of losing \$1,000,000 from its expected revenues. Minneapolis and St. Paul have both for some time had abbreviated school years. Dayton, to build a magnificent \$400,000 high school building, has docked the high school teachers' salaries for years. Pittsburgh, which three years ago had twelve night schools, reduced the number the following year to eight, and last year abandoned them altogether, as Chicago has done this year. In the larger cities there are not even seats enough for the children (see Appendix IV). In not many, even of the well-equipped high schools, are there enough teachers. In few grade schools are the teachers allowed to specialize in the branches they are best fitted to teach. Nevertheless, when one considers the great expense of a comprehensive and universal system of popular education, the miserable compensation accorded to most of the teachers,¹ the

¹ "A minimum wage" of \$600 a year has now been established by law in New York. See "Plain Words on Teachers' Wages," by William McAndrew, *The World's Work*, February, 1902.

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ignorance and indifference of the parents, the general apathy with regard to public institutions, the undermining influence of political pulls in school organization, the insidious influence of text-book companies, — one finds much encouragement in the progressive schools of some of our cities. There are several which may serve as examples to the rest of the country. It is probably not invidious to choose Washington, as its reputation is well known, and the literature distributed by the government will easily inform inquirers.

The ideal of connecting the school with the home and with industry is appreciated in Washington, where the old sedentary habits and text-book methods are largely abandoned. In commending the schools of Washington, it must, however, be noted that Mr. W. B. Powell, the superintendent, to whom Washington is chiefly indebted for its advanced position, has lately been removed by the board of trustees, because of an investigation made by a committee of the District of Columbia for the Senate, in which it was demonstrated that some of the children could not spell. The report,¹ in the eyes of an impartial observer who can read between the lines, is highly commendatory of the Washington methods, and explains the bias of the committee.

The commissioner of education, Hon. W. T. Harris, in an inquiry which he made into the methods of the Washington schools in 1892, made

¹ No. 711, Senate Documents, 1900.

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criticisms which were justified because based on appreciation. He says: "A too great neglect of information studies, and too close adherence to reading, writing, and arithmetic, lead to a strong accentuation of the other side, that of science, industrial training, and physical culture. If these again are pushed to extremes the pendulum swings back again. . . .

"The great staple branches of the elementary school — reading, writing, arithmetic, grammar, and history — have not suffered materially by the introduction of the new branches, while on the other hand much has been gained in rendering the school system able to cope with the great problems of city growth."

The reports of the superintendent for the years 1896–1899, which give an exposition of the purposes of the educational system, can be confirmed by personal observation. The methods are nearly as successful as the aims are scientific and logical, although it must be recognized that in Washington, as elsewhere, the best methods require the best teachers, and these cannot always be secured for the pittance which is paid public school teachers to-day. As Commissioner Harris points out, while government clerks in Washington receive \$900 a year, it must be difficult to secure good teachers for \$400, and it is not uncommon for experienced teachers to leave the schools for government clerkships.

The methods of the Washington schools as they come under personal observation are convincing.

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A child is taken to an elevated part of the city from which he can view the topography and thus enlarge the conception of geography which he has already gained in the journey from home to school. He is following the correct method of proceeding from the near to the remote, from the known to the unknown, and he is doing it collectively, co-operatively. He is then prepared to return to the schoolroom and, with the aid of relief maps (not the flat maps of the geography text-book which are an abstraction), he can enlarge his horizon until he is prepared for a study of the globe.

Among the next steps in gaining concrete information by personal experience may be the study of the evolution of transportation, from the canal boat which he visits to the various forms of locomotion illustrated in the National Museum. The evolution of the timepiece and other mechanisms which he finds in this great museum, gives him a further field of observation. Thus additional emphasis may be laid by the teacher on the basic principle of development.

In his visits to the zoölogical garden he finds not only a satisfaction of that curious interest in animals which all children possess, but instruction through seeing the methods of the animals, which are more natural in the Washington "zoo" than elsewhere, owing to the greater freedom they enjoy, happily described by Seton-Thompson in a popular magazine.¹ The delight which comes from the

¹The *Century*, March, May, 1900.

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observation of animals is not confined to the wild and exotic specimens; the beloved domestic dog is brought into the schoolroom. Could the evidence of the superiority of the new methods over the old be more vividly presented than in the contrast of a beautiful Scotch collie sitting on a desk of the schoolroom, all the children enthusiastically intent on his actions, with the pathetic old story of Mary's little lamb?

The public institutions of Washington present unique opportunities to the children of the city schools. They are taken to the Corcoran Art Gallery, where they find one of the best collections in the country, and under the guidance of their teachers are led to an appreciation of art. They visit also the Congressional Library, that they may have an introduction to the use of a great reference library before they leave the schools and abandon their studious habits. Although Washington possesses a public library and the schools are commonly equipped with books, there is an education in this great national collection of the world's literature and in its beautiful architectural environment of which the school authorities avail themselves. Civic instruction is made easy at the national capital by the possibility of taking the children to see the great legislative bodies in session. They visit the houses of Congress and the Supreme Court chamber, and receive impressions which the textbooks cannot give.

The study of nature is also pursued in the fields

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through the botanizing and sketching expeditions; in fact, the excursion is an organic part of the Washington schools, as it is universally of the German schools.

Not content with the subordination of sedentary methods in the pursuit of knowledge, the Washington system also includes physical culture, from the little children of the kindergarten and lowest grades, who early get both grace and strength from their calisthenics, to the young men and women of the high school, who enjoy, at least in the Western High School building, as good an equipment in gymnasium and baths as can be found in the country.

This progressive high school also possesses the hygienic and social feature of a lunch room, in which the young people are protected from the enticements of the confectionery shops, and at the same time have opportunity for social intercourse, which is scarcely possible in any other school relationship. The food is sold to the pupils at a very reasonable price, and they buy only as much as they want, bringing the whole of their lunches if they prefer.

One other feature of the Washington schools which has its physical as well as intellectual advantages must be noted: that is the genuine *Kinder-garten*, an actual growing, outdoor garden, in which the children can both work and play, and gain the first-hand knowledge of nature which cannot come too soon.

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As has been previously stated, it must not be supposed that Washington is alone in these methods, although they have probably been more generally pursued there than elsewhere. One example from Chicago may indicate the extension of the method of observation in other communities. At the Lewis-Champlin school the principal, Miss Kate Kellogg, has devised a curriculum for each grade, which will enable the children to develop many of their subjects of study from some well-known city experience. In the primary grades, the active interest of the children in the fire department was made the basis of their constructive work, giving "an easy channel for the free use of oral and written language" and lending itself "naturally to the interests of games and dramatization." The finances of the fire department were made the basis of arithmetic. Visits to the engine house and the Columbian Museum gave them a knowledge of invention and construction and the interdependent social life of to-day, as contrasted with the past. The large number of fires in the tenement districts introduced questions of space, air, light, and social relations. The sixth grade followed the methods of the contractors in paving and building, and gave practical expression to their investigations in requesting improvements in the school grounds, based on their own specifications. The seventh grade developed from their drawing lesson a comprehension of the smoke nuisance, which led them to an examination of the revised code of Chicago

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and the great field of problems therein involved. This resulted in special attention being given to the disposition of the city's wastes, including comparison of the work of Colonel Waring, and an individual proposal from each child of a method of solution. The eighth grade followed this subject into the intricacies of sewerage and drainage, studying the history of Chicago and its most recent accomplishments. The mechanical genius of the boys found expression in the construction of bridges, locks, boats, and all appurtenances of the drainage canal. This subject was not left without a considerable survey of the governmental questions involved.

The culmination of these studies is in the organization of the school itself on municipal plans. Although the purpose of this work was largely to develop a municipal social consciousness, as Professor Henry W. Thurston says in the *World Review*, its methods are those of the best pedagogy of to-day, which is slowly revolutionizing the school curriculum.

The transition from the old "literary" education of the three R's to the newer subjects of instruction is inevitable because it is based on an industrial and social evolution. The industrial revolution which resulted in the factory and the great urban communities, and the domestic revolution which accompanied it, surrendering the old household industries and simplifying the conditions of life, necessitated a change in the method of the instruc-

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tion of the child. The newer subjects of instruction are those which were formerly unconsciously acquired at home. The progress of the schools is therefore taking the form of the introduction and development of the kindergarten, nature study, manual training, domestic science, vacation schools, and similar variations in the old curriculum.¹ The extension of the public school kindergartens is one of the most significant and hopeful of contemporaneous educational tendencies.² A free kindergarten conducted by charity was necessary to the experimental stage, as was the kindergarten supported by the fees of wealthy people. But the slavish devotion to Fröbel and the excessive sentimentality of the early kindergartens are yielding to more scientific as well as human methods, as the coördination of the kindergarten with the grades brings in unity and democracy. The influence of the public school system on the kindergarten has been as wholesome as the influence of the kindergarten on the public school.

The extension of the idea that the "whole boy" goes to school, is but one of the beneficial results of the introduction of the kindergarten into the public schools. The representation of nature

¹ Dewey, "The School and Society."

² Public kindergartens are much more common in the larger than in the smaller cities. In the thirty-eight cities having over one hundred thousand population those reporting no public kindergartens in 1901 are Baltimore, San Francisco, Cincinnati, Louisville, Minneapolis, Indianapolis, Columbus, St. Joseph, Missouri, and Memphis. Baltimore is this year introducing the public kindergarten.

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—so easy and dear to the child—which one finds in kindergarten games, is only the beginning of that larger study of nature indispensable to a comprehension of life. The so-called nature studies are dependent for their usefulness both upon the adoption of advanced methods in the teaching of natural sciences, in which has been gradually substituted the living for the dead, and upon the possibility of securing competent teachers. The already overburdened teacher on whom is laid the necessity of teaching all the natural sciences, for which he is often entirely unprepared, will in all probability do it so indifferently as to justify the criticism of the study as a "fad." This has happily not prevented the introduction of nature study into the curriculum throughout the country, and each year finds the work more thorough, and its place better assured.

The importance of nature study in the school curriculum may be illustrated by the Girls' Normal School of Philadelphia, in which a course is given to the normal students and to the young children in the practice school. Beginning with the kindergarten, the study is embodied in their games and songs, a representation of a bird teaching what flight and freedom mean; in the keeping of pets, to develop care and responsibility; in excursions to a farm, to the park, and to the zoölogical garden; in collections, *e.g.*, of cocoons and empty nests; in the use of pictures; in manual activities, and in literature. Advancing through the grades one finds

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that the materials of the laboratory and museum are made intelligible by first-hand observation. Fairmount Park, with its fauna and flora, is used extensively. A beehive teaches the organization of the life of the bee. The aquarium provides fish, and butterflies are not only observed in their native habitat, but are kept in the schoolroom. The earthworm is studied in the neighboring park-way. The limited number of specimens found in the park or in the country is amplified by the collections of the museum. Living specimens are brought to the school as far as possible, and the methods are strictly those of the laboratory rather than of the classroom. The study is not confined to organic nature, but passes on to observations of the clouds and wind, the action of water in all its forms, and the relation of these things to the work of man.

The facilities are excellent in this building which, including land, cost \$335,000. The cost per pupil per annum is \$105, which, like the original cost of the building, represents of course partly adequate equipment and partly Philadelphia extravagance. It is, however, only typical of the elaborate equipment being made in our high schools and normal schools to-day and gradually extended into the grades — an equipment which, when economically supervised and used by well-trained teachers, will result in a dividend of workmanship and citizenship which will meet with the approval of the taxpayers.

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Manual training, which began in Washington University, St. Louis, has lagged behind the more recently developed nature study, chiefly doubtless because of its expense. Its value is now generally recognized, although it is not yet fully appreciated that justice can be done to the function of manual training in education only when it is pursued continuously from the kindergarten to the school of technology.¹ Indeed the high schools may justly become technological schools if the proper amount of manual training is given in the grades.

The fear that young men will lose time and the opportunity for advancement by remaining in school and out of the shop is met largely by a rational coördination of their earlier studies with manual training. There is no doubt that the work

¹ The late General Francis Walker's testimony is unusually suggestive : "I entered the schools of Massachusetts at five years of age, and left them at fifteen to go to college. In all the interval I do not remember ever to have been set to any study or exercise which I could not have done just as well if born without hands, except solely for the convenience of holding a book and turning over its leaves, or of writing on paper, slate, or blackboard ; which I could not have done just as well if afflicted with total blindness, except solely for the greater difficulty of learning lessons by having them read to me ; indeed, but for this, a blind boy would have had an advantage over me, as being less subject to having his attention disturbed by surrounding objects. I do not recall any exercise which I could not have performed equally well without the use of hearing, except only for purposes of communication with the teacher ; and, indeed, a deaf child would, but for that, have had an advantage over me, as being less subject to interruption or distraction from without." (Walker, "Discussions in Education," p. 155.)

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of some of the manual training high schools of the country is done without any injury to the literary studies, although the time given to shop work is added to that already appropriated by the old curriculum. In fact personal observation warrants the statement that in the manual training schools of Indianapolis and St. Paul the general work is better done since the addition of manual training. In St. Paul the literary high school has introduced an extensive course in manual training and domestic science, because of the unquestioned success of the Mechanic Arts High School. The superintendent of the latter school, Mr. George Weitbrecht, says:—

“The Mechanic Arts School of this city started with the idea that manual effort took the place of mental effort; that there was just as much intellectual discipline derived from sawing a board straight or making a dove-tailed joint as there was in translating a passage in Cicero, or solving a problem in geometry. In my opinion, such statements are one-sided and unpedagogical. Mathematics does something for the mind that cannot be done by language, science, literature, or anything else in the course of study. So does each of these do something that the others cannot do. Equally true is it that shop work, drawing, modelling, and all the other arts and crafts, involving hand and mind jointly, make contributions to the development of the child that nothing else can furnish. The course of study should include those things

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that will develop the whole capacity of the child,—all the senses, including the much neglected sense of touch. In this school, coincident with the enrichment of the academic side, there has been a vast improvement in the quantity and quality of the work on the shop and drawing side of the school."

The Manual Arts High School of St. Paul is continually enlarging its facilities by making needed machinery. The ability to do work which will be of positive value to the school from the standpoint of the budget as well as in instruction is a mark of efficiency which must appeal to all of the citizens, and especially to the taxpayers.

The Toledo Manual Training School was endowed originally in 1872 as the University of Arts and Trades.¹ The development of the manual training school as a high school has nevertheless resulted in such a high class of work as to give a temporary justification to the present title, the Toledo University Manual Training School, and to lead to a great deal of friction with the regular

¹ This high-sounding title did not quite represent the clearly defined aims of the founder : "To establish an institution for the promotion of knowledge in the arts and trades and the related sciences by means of lectures and oral instruction ; of models and representative works of art ; of cabinets and minerals ; of museums instructive of mechanic arts ; and of whatsoever else may serve to furnish artists and artisans with the best facilities for a high culture in their respective occupations, in addition to what are furnished by the public schools of the city. Also to furnish instruction in the use of phonographic characters, and to aid their introduction in more general use in writing and printing. And, also, to encourage health-giving, invigorating recreations."

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public high school. When the work of the grades is properly done both schools will doubtless be on this higher plane. Already both boys and girls of the fifth and sixth grades are being prepared for this advanced work by manual training, and the seventh and eighth grades produce results which would have done much credit to the manual training high school of a few years ago.

What can be done by one progressive teacher is shown in the development of a complete system of manual training in the schools of Columbus, Georgia, in spite of the absence of the subject in all the other neighboring cities. Baltimore has a manual training school for white children and another one for the colored youth. Philadelphia, which until quite recently had only one high school for boys, and still has a central high school which is largely attended from all parts of the city, has recently introduced a system of manual training schools, and the tendency now is to locate manual training high schools in different parts of the city.¹

There seems to be as yet no American example of the conduct of domestic science in such an economical manner as to give a return for the product of the cooking classes, as is the case in

¹ Some of the cities which have introduced manual training into the grade schools as well as in special high schools, in addition to those already mentioned, are Boston, New York, including Brooklyn, Philadelphia, St. Louis, Syracuse, Indianapolis, and San Francisco. Evanston, Illinois, has one special manual training building for seventh and eighth grade pupils.

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London ; but the value of the subject is none the less evident. It is difficult to choose examples, where there are so many excellent instances, but mention may be made of domestic science work in the manual training schools of Toledo, St. Paul, Indianapolis, St. Louis, Washington, and Boston, and in the grades of most of these cities as well as in smaller places. In Moline, Illinois, a group of women opened a school of domestic science, which has since then been adopted by the school board, and excellent work is done in one of the school buildings, the girls coming from the various schools of the city once a week. The area of the city permits the use of this one centre, although it is only the familiar cry of poverty which prevents the development of that subject in the other school buildings. Another small city which boasts of a record of its own is Urbana, Illinois, where the private initiative of women has again enriched the school curriculum.

Very important results have been accomplished in Washington, St. Louis, and elsewhere in teaching domestic science to colored girls. There is an unfortunate limitation placed upon the industrial field of the colored woman. The negro man finds his way into many occupations, but apart from teaching her own race, domestic science is almost the only honorable occupation open to the negress. The training of skilled domestics becomes then a very important function of schools which are attended by negro girls.

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It is necessary to lay stress upon the fact, however, that domestic science is not commonly taught to furnish entrance to an occupation. It is partly a form of manual instruction having the same pedagogic value which other forms of manual training have, and it is partly viewed as the necessary practical equipment of every woman. Here, as in the case of manual training for boys, it becomes increasingly important to extend the work into the grades, that proper preparation may be made for advanced instruction in the high school.

There are many forms of manual training open to both boys and girls. In the high schools of Sterling, Illinois, and Denver, to name no others, a printing outfit is used in the publication of outlines, programmes, and magazines. The Boys' Club of Holyoke, Massachusetts, conducts a book bindery. Among the smaller children it is not uncommon for the boys to learn to sew and the girls to do woodwork. Clay modelling is usually open to both sexes, and in the case of both subjects, there is an increasing recognition given to the value of designing. The work done in one semester in the Manual Arts High School of St. Paul, in clay modelling and the making of designs for wall-paper, book covers, and screens, is marvellous to the untutored mind of the past generation.

The elaboration and strengthening of the curriculum do not exhaust the possibilities of increasing the usefulness of the schools. The school year is being extended, both in the rural and in the city schools.

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Vacation schools are commanding increasing attention throughout the country. Thirty years ago, the board of education of Cambridge, Massachusetts, said in their annual report:¹—

“For two months in the summer the schools are closed. The children who are taken into the country profit by the vacation, but it is a time of idleness, often of crime, with many who are left to roam the streets. Our system seems to need vacation schools in which the hours and methods of study should be adapted to the season.”

The vacation school was not started in Cambridge, however, until 1896, when a committee from the Mothers' Club, taking advantage of the courtesy of Mr. Rindge, the founder of the Cambridge Manual Training School, and of its supervisors, opened a vacation school for boys. So great was the success of the school that the following year the number of boys admitted was doubled, and a school for girls was opened. In 1898 twice the number of each were admitted to their respective schools. In December, 1899, on petition of the citizens the school committee voted to establish vacation schools during the following summer, provided the city council should appropriate \$2000 for their maintenance, which was done on March 6, 1900. As indicating one of the advantages of a public provision, which usually reaches a larger number of children than private philanthropy, the decreasing cost per capita with the increase of attendance may be noted.

¹ Report of Cambridge Board of Education, 1872.

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	PUPILS	TOTAL COST	COST PER CAPITA
1896	60	\$ 660	\$11.00
1897	180	1307	7.26
1898	187	1298	6.94
1899	352	1588	4.51

The example of Cambridge proved infectious in Boston, where voluntary agencies were conducting vacation schools, and the same amount, \$2000, was appropriated for vacation schools under the board of education in 1900.

Meanwhile the vacation schools which had been instituted in the same manner by the New York Association for improving the Condition of the Poor were made public by the appropriation of \$10,000 in December, 1897, for vacation schools in 1898. The meaning which was attached to the term may be indicated by the communication which was sent by the board of superintendents to the board of education in May, 1897:—

“CITY SUPERINTENDENT’S OFFICE,
“NEW YORK, May 18, 1897.

“TO THE HONORABLE BOARD OF EDUCATION:

“I have the honor to submit the following, adopted by the Board of Superintendents at its last meeting of May 17th, upon the report and recommendation of its Committee of School Management:—

“RESOLVED, That the course of study in such schools should consist largely of manual training, reading, writing,

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natural sciences, and such other studies as would cultivate the love of nature and good literature.

“ RESOLVED, That it is the sense of the Board of Superintendents that the schoolhouses may well be used in the cause of education as neighborhood centres, providing reading rooms, branch offices of public libraries, etc., under the charge of custodians, under such restrictions and rules and regulations as the Board of Education may establish.

“ RESOLVED, That the Board of Education be requested to secure the coöperation of the Department of Parks and the Trustees of the Museum of Natural History and the Metropolitan Museum of Art, with a view to the utilization of parks for the purpose of promoting the study of nature, with special reference to the natural sciences.

“ Respectfully submitted,

“ JOHN CASPER,

“ *City Superintendent and Chairman of the
Board of School Superintendents.*”

Since that time the idea has still further grown to include playgrounds and playrooms, and the whole system is now called Play Schools. In 1899 the board spent in this way over \$48,000. Last year nearly fifty thousand children received benefits from this educational movement, and nearly nine thousand teachers and other workers were engaged in it.

The vacation schools of Philadelphia were inaugurated by women members of the Civic Club. In 1898 they persuaded the city councils to appropriate \$3000 for vacation schools, and three schools were opened by the Philadelphia school board. In Buf-

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falo the movement was inaugurated by the teachers who subscribed the necessary funds and gave their services in addition, an example which ought to loosen the purses of tight-fisted taxpayers.¹

In 1896 the Chicago Civic Federation maintained one school of four hundred children, for which a thousand applications were received. In 1897 a school was carried on under the auspices of the University of Chicago Settlement. In 1898 a Federated Committee of the Women's Clubs of the city raised \$9000, with which five schools and six playgrounds were supported. The result of the agitation and propaganda of that year was the organization of a permanent Vacation School and Playground Committee of Women's Clubs, which has a representative body of educators as directors of the schools. Each succeeding year the vacation school work has been continued, but fewer schools have been opened, owing to the difficulty of securing subscriptions. The school board has received from the legislature authority to conduct vacation schools, but has not yet availed itself of the privilege, although the playground movement has been municipalized.

Some statement of the methods of the Chicago vacation schools may illustrate the general purposes of this new educational feature. In contrast

¹ Many cities have followed the example, and vacation schools and playgrounds have been conducted in Brooklyn, Providence, St. Louis, St. Paul, Pittsburg, Louisville, Indianapolis, and elsewhere.

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with the New York and Pittsburg schools, where each pupil has but one or two kinds of work during the summer, it has been the purpose in Chicago to give every pupil a variety of work, not only during the six weeks' term, but daily. The subjects chosen have been drawing, nature study, music, and physical culture for both sexes, manual training for the boys and sewing for the girls. Each child has also had an excursion once a week to a park, a farm, the woods, or the lake. The vacation schools endeavor to give the children a change from the regular work of the school year. Text-books are abandoned and the studies revolve about the weekly excursions and the daily experiences. An effort is made to let the six weeks' work of the vacation school accomplish for a child in the crowded city quarter what the vacation in the country, the seaside, the mountains, or even the suburb or the park do for the more fortunate. The intention is, if possible, to fit the poorer child physically and intellectually to resume his regular work in the autumn.

The moral value of the vacation school to the resourceless child of the city streets has been sufficiently dilated upon. There seems to be no doubt that juvenile misdemeanors are greatly reduced as a consequence of this occupation during the summer months. The vacation school also furnishes an admirable laboratory for pedagogical experiments. Many of its methods are already introduced into the school curricula, but it also

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makes an opportunity frequently for the education of conservative school boards.

Incidental features of the system are the arousing of interest on the part of the parents, especially the mothers, and the cultivation of patriotism—national and local—in the children. The Chicago vacation schools are opened with exercises which include the singing of a patriotic hymn, the saluting of the American flag, and the repetition of the Civic Creed.¹

“God hath made of one blood all nations of men, and we are his children, brothers and sisters all. We are citizens of these United States, and we believe our Flag stands for self-sacrifice for the good of all the people. We want, therefore, to be true citizens of our great city, and will show our love for her by our works.

“Chicago does not ask us to die for her welfare; she asks us to live for her, and so to live and so to act that her government may be pure, her officers honest, and every corner of her territory shall be a place fit to grow the best men and women who shall rule over her.”

The industrial and commercial expansion of the United States is causing the introduction of commercial education into the high schools and sometimes it results in the establishment of special high schools. Commercial courses are given in many of the cities, both large and small, but the most notable recent developments are in such

¹ Composed by Miss Mary McDowell, of Chicago.

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commercial high schools as one finds in Philadelphia and Pittsburg, and which New York promises now even to excel. The advantage of the public commercial school is that the commercial subjects are taught as a part of general education, and thus the narrow ideals and limited training of the business college are avoided. The equipment of the commercial high school in Pittsburg is equal to that of the best business colleges, while the curriculum corresponds otherwise to that of the other high schools.

An educational problem which never ceases to be perplexing is that of discipline. Throughout the nineteenth century there was a development which tended to make school discipline more rational, and along with the abandonment of corporal punishment, which is now entirely absent from most of the western cities and decreasing elsewhere, has come an increasing tendency to make a child independent, while still maintaining order in the school. Professor Wilbur S. Jackman says: "There must be a freeing of the children in the schoolroom. No one who has not to deal with pupils who have passed through the grades of the common schools has the slightest idea of the ruinous effect of the teacher's eternal dictatorship upon the character of the children. Almost everything done in the schoolroom is imposed upon the life of the pupil, — the pages he shall learn, the lessons he shall recite, the things he shall draw, the copies he shall write, the selections he shall read, the problems he

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shall solve, the rules of conduct he shall observe,—everything has to be accepted without question, and the obliteration of personality is the horrible and inevitable result." One is reminded of the great friend of the kindergarten, Kate Douglas Wiggin, who said that the boy who stood on the burning deck was "a sublime idiot."

To meet the need of school discipline and at the same time to give that preparation for citizenship which no text-books on civics or ponderous volumes on constitutional law can inculcate, the system of pupil government in the public schools has been devised. This method has not been confined to any one city, nor even to the public schools. The most illustrious examples of self-government come from the George Junior Republic and similar institutions. In fact, the experiences of these schools of correction have demonstrated that such a device ought to be even more successful in the public schools, made up of normal children.

In the last decade one high school and several graded schools in Chicago have undertaken to secure the coöperation of their pupils in the government of the school. One of the first experiments was made by Principal French of the Hyde Park High School in 1894, modified and elaborated by him for several years, and since 1897 intrusted to the pupils. The model of the School City, as it is called, is the city of Chicago, at least on paper. The officials are a mayor, two aldermen from each room, and two teachers elected from the

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faculty. The council provides for the establishment and maintenance of a department of public order, a department of health, a department of public works, and a fire department. All acts, legislative, executive, and judicial, are subject to the approval of the principal. It must be admitted that the evidence as to the success of the system is conflicting, but it is still in operation, and many pupils as well as the principal testify to its efficiency. If the results are not entirely satisfactory, it is well to bear in mind that the methods of representative government exemplified by the larger community which the high school students see and know, are scarcely inspiring to those who are experimenting in this school democracy (see Appendix V.).

In the Masten Park High School of Buffalo and in the Manual Training School of Toledo the system has been modified by devising a government which is adapted to the particular functions of the school, without regard to any political prototypes. A much simpler method of pupil government has been introduced into some of the Chicago grade schools, notably the John Crerar School, where the principal, Mr. Ray, is enthusiastic over its success. Over a dozen of the grade schools have undertaken some such plan, and it at least has the merit of encouraging its continual extension to other schools. Mr. Wilson L. Gill, president of the Patriotic League of America, is said to have devised the first miniature municipality, which has been called the Gill School City. Its methods

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have been very simple, and in one of the public schools of Philadelphia have been successful. It is doubtless true that in the first instance extreme simplicity is necessary to secure appreciation and response from the pupils.

Another method of impressing civic responsibility has been attempted in the Central High School of St. Paul, where the principal, Dr. Robinson, is requiring from each of the seniors an illustrated essay dealing with some crucial problem of the United States. Lantern slides are made of the various graphic features of the subject and presented to the school, whereby the entire number are interested in each student's subject, and fairly comprehensive surveys can be made.

Akin to this device is the elaborate illustrative equipment provided in the schools of New York State, through an act of the year 1899, which is designed "to provide that additional facilities for free instruction in natural history, geography, and kindred subjects by means of pictorial representation and lectures, may be furnished to the free common schools of each city and village of the state." (The complete bill is given in Appendix VI.)

The education of adults, and of those who have had to leave the regular day schools early in order to enter industrial occupations, has led not only to the establishment of evening schools in many of the cities of the country, but also recently to systems of free lectures. The school committee of

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the city of Boston in 1868, on the basis of an appropriation of \$5000, opened 9 schools for teaching the elementary branches, with 45 teachers and an enrolment of 1556 pupils. The following year an evening high school was established. Now evening high school branches are conducted annually in Charlestown and East Boston, on three evenings of the week, and the central high school is open five evenings. Twelve elementary schools are also maintained.

The enlarging conception of public education has been well stated in the report of the Boston school committee for 1899. "The city erects, year by year, new and beautiful buildings, which, except during school hours, practically remain idle and unoccupied. We believe this ought not to be, but rather that local interest in the school should be encouraged and stimulated by the forming of school societies, which should meet in school buildings; that the parents and teachers should come in closer touch, that the parents should understand and appreciate the earnestness and conscientiousness of the day-by-day work of the teacher, and that the teacher should come into full sympathy with the views and ambitions of the parents concerning the welfare of the child. The availability of the schoolhouses for evening entertainments for the benefit of the neighborhood in which they are located has also been recognized, and recently, with the cordial assent of the school board, a number of our buildings have been used

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for free lectures and concerts given under the auspices of the municipality, to the great benefit and enjoyment of certain residents of these sections of the city, where opportunities for obtaining such advantages and pleasure are limited.

"Another, and we believe praiseworthy, experiment has just been inaugurated in one of our schools, in which two rooms are to be equipped with electric lights, and are thrown open once a week from seven to half-past eight o'clock for the accommodation of pupils whose home surroundings are inconvenient for purposes of study. Either the master or one of the teachers is present each evening to give such advice and assistance as may be needed, and the attendance of pupils thus far indicates their appreciation of the interest shown in their behalf."

The most unique development of this kind of popular education has taken place in New York City, where a free lecture course was established in 1888, as a result of action by the state legislature, looking to the provision of free lectures for the working men and women of New York City (see Appendix VII.). The inhabitants of Manhattan had the good fortune to possess a champion of this movement in the person of Commissioner Miles O'Brien, to whose encouragement is doubtless due the fact that the effort lasted through its first troublous years. The statistics are startling in the growth which is exhibited, especially since the matter was intrusted to the present superin-

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tendent, Dr. Henry M. Leipziger, who took charge of the New York Free Lectures in 1890.

During the first season six lecture centres were established, 186 lectures given, and the attendance was 22,149; the second season 329 lectures, the attendance 26,632. Since 1890 the course has been thoroughly organized, and the great results — as shown by the following table — attained :—

For 1890-91,	185	lectures ;	attendance,	78,295
" 1891-92,	287	"	"	122,243
" 1892-93,	310	"	"	130,830
" 1893-94,	283	"	"	170,368
" 1894-95,	502	"	"	224,118
" 1895-96,	1,040	"	"	392,733
" 1896-97,	1,065	"	"	426,927

Since 1897 there have been over half a million auditors a year. In 1901-2 the system was extended to the other boroughs, with the result that the attendance rose to nearly a million.

The school authorities spent last year \$150,000 to provide this night instruction of adults in addition to the regular night schools. The "lectures" may be entertainments, elocutionary or musical, or *bona fide* lectures, commonly illustrated by the stereopticon, or they may be made more instructive by being given in series. As the communities, in the judgment of Dr. Leipziger, become prepared for it the courses grow longer and more serious, sometimes extending over a whole season, including twenty-four lectures, classes, and examination.

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Following the example of New York, Boston has undertaken free municipal lectures. The Twentieth Century Club first provided lectures at six public schoolhouses, where thirty-six lectures were given by twenty-seven lecturers. The stimulus to the movement came directly from an address given by Dr. Leipziger before the club. Subsequently the movement developed until a large number of courses were given in 1900-1 in the old public library building, and others in various parts of the city, the total number of lectures being eighteen and the total attendance 18,200.

The Public Education Association gave courses of lectures in five schools of Pittsburg in March, 1902.

Spasmodic attempts have also been made in Chicago to carry on free lectures by one of the public-spirited newspapers, by the University of Chicago, by the Merchants' Club, and by other private bodies, but no impression was made upon the school board which interposed obstacles until the mayor issued an *ultimatum*. The desire to enlarge the conception of the functions of the school has led in Chicago to the organization of the School Extension Committee, an elastic body of self-elected citizens, who propose, among other things, the following added features for the Chicago school system, namely: Properly equipped and managed playgrounds; school auditoriums for the use of pupils and public; shower baths and swimming tanks; gymnasia with instructors;

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branches of the public library in schools; free lectures conducted by the Board of Education; vacation schools; opening of schools after school hours as neighborhood guild centres, for free entertainments, non-partisan public meetings, and meetings of parents' clubs; laying out and planting gardens for the instruction of pupils. This is simply an effort to incorporate the best features of the newer educational methods which are already in use in one part of the country or another. Several of the Chicago schoolhouses have already been used as social centres, following the suggestion of the Boston report already quoted, but once more New York has actually done what Boston and Chicago are proposing.

Mothers' and parents' clubs are springing up in many cities. It is now proposed to have a league of mothers' clubs in Chicago in the interest of a comparative study of the schools. The School Extension Committee has a sub-committee in every school district making a personal investigation of each schoolhouse as in Boston and in Washington. A summary of the results of the sanitary investigation in Washington is given in an appendix to the next chapter.

In one of the schools of Indianapolis, located near the outskirts of the city, the assembly hall, which is the only hall within a radius of over a mile, has become the gathering place of parents and others on certain evenings of the week. A nature club conducts excursions weekly, when

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the weather is propitious, arranges for nature celebrations, such as Arbor Day, Thanksgiving, and May Day, raises flowers in the front school yard, vegetables in the rear, and from the sale of the latter has bought an aquarium. The playground of the school is used on evenings and on Saturdays, equipped through the efforts of the people themselves. There is a girls' mending class meeting on Saturday afternoons, and a public reading room open on Tuesday evenings, where is located also a branch of the Public Library. A mothers' class meets Thursday afternoons, and a lecture and entertainment are given once a month.¹

One recent interesting extension of the influence of the schools is found in the development of interest among the children in planting flowers about the school buildings and their homes. The Home Gardening Association of Cleveland undertook to interest the children in the cultivation of flowers, and a meeting was held at Goodrich House on February 23, 1900, of a committee of settlement workers and public school officials. According to their report: "The matter was presented to the teachers and pupils by means of a circular sent from the office. It met with the hearty approval and coöperation of the entire teaching force. The plan adopted was to supply penny packages of easily grown flowering annuals, to be sold to such pupils as wished to purchase them. A choice of nine varieties was given, and when the

¹ Anna Brockhausen, "Complete Education," 1900.

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returns came in it was found that nearly fifty thousand packages had been asked for."

The most encouraging result perhaps of this enterprise was that the small charge paid for these envelopes of seeds covered all the expense of buying the seeds in the gross, sorting them, printing the envelopes, and distributing them. The following year, encouraged by their pioneer efforts, they undertook this work on a larger scale, with the result that 121,000 packages were sold to the children, and in addition to the satisfaction which the pupils thus had in cultivating their own gardens, they enjoyed the use in the school buildings of 3000 bulbs bought from the surplus.

A similar movement has been carried on with success in some of the cities of New York State under the direction of the university extension department of Cornell University. In Rochester seeds were planted in the school yards by the children, and in addition to these, six thousand packages were purchased for home use. Another feature of this New York State work with children is the organization of junior naturalist clubs. There are about three thousand of these now in the State, with a membership of thirty thousand children.

It is not a very long step from the appreciation of nature to the art influence of the schools of to-day. This takes the form of art instruction and of beautifying the school buildings. Art instruction in the schools has advanced remarkably in the last few years. In Massachusetts there is a State super-

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vision of the instruction which tends to extend the good influences of Boston and other progressive cities over the whole State. The art instruction in the Massachusetts schools is carried on throughout the entire system from the State Normal Art School down to the lowest grade. In 1899 there were 167 cities and towns employing supervisors of drawing. The extent to which the appreciation of art instruction has gone may be seen by the fact that thirty-nine cities and towns are now required by law to furnish opportunity for free evening instruction in drawing. These are the towns of ten thousand population and over, including 70 per cent of the population of the State.

In New York City previously to 1897 the drawing was taught by the class teachers without assistance. In that year Dr. James P. Haney, supervisor of manual training, had added to his functions the supervision of art education, which required not simply the teaching of the children but of the classroom teachers. He has now fourteen assistant supervisors of drawing. The teachers are invited to attend the meetings of the supervisors, and about twenty-five hundred of them do this every week, the whole number of teachers' meetings in the course of a year being nearly one thousand. Classes are held on Saturdays, attendance at which is optional, and the average number of teachers present has been four hundred. These figures will perhaps indicate not only the growing interest among the teachers themselves, but the vast-

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ness of the system. Similar conditions may be found in Washington, Chicago, St. Louis, and elsewhere.

Along with the extension of art instruction in the schools have come more rational methods. In Chicago it was found that whereas only 50 per cent of the children could reproduce an object in black and white, 99 per cent could do this with the use of colored crayons. Black and white give to the children an abstraction, while they see the natural colors and reproduce them without conscious effort.

One of the most significant developments of the manual training schools of to-day, found also in some of the grade schools, is the growing emphasis on the work of design. Manual training, which has been regarded chiefly as an agency in industrial education, has not always been advocated or taught by those who know the proper place of design in all industrial and art education. To give the child the power of expressing whatever creative spirit is in him, and at the same time to give him the realization of his limitations, is the aim of the best art teaching of the day.

In addition to the instruction in the classroom, when it is possible the children are given the opportunity of visiting the art collections of the city, a practice in vogue in Boston, Chicago, St. Louis, and elsewhere. Both public schools and public libraries assist the children by collections of photographs and half-tones which are circulated freely in the classrooms and sometimes bought

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and taken home by the children, as in the case of the familiar Perry pictures. Miss Mary L. Purer, principal of the Lafayette school, Chicago, has collected eight thousand pictures to aid in teaching history, geography, literature, and art. The illustrative materials furnished to the schools of New York State by the University of the State of New York (Albany) and by the American Museum of Natural History (New York City), are not only superior to anything to be had in any other States, but beyond any similar provisions in all the other States (see Appendix VI.).

Among the other arts taught quite generally in the schools is music. Splendid results in chorus singing have been attained, for example, in Washington, in the vacation schools of Chicago, in Springfield, Massachusetts, and in Pueblo, Colorado. Interpretative recitals are given by the pupils in Springfield. In the schools of Pueblo the first half-hour, three days a week, is given to music instruction, and on Friday a pupils' concert is rendered.¹

A further encouragement of art comes from the widespread movement to-day to introduce school decoration. Nearly a generation ago a committee of the American Social Science Association undertook to decorate the Girls' High School in Boston. The walls were tinted, and more than \$1500 were raised for the purchase of casts of the Parthenon frieze, statues, busts, and pictures. It was not, however, until 1892 that the first public school art

¹ Search, "The Ideal School" (Appleton).

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society was organized in Boston, and this ten years after the Art for Schools Association had been founded in London with Ruskin as its first president, which had undoubtedly been inspired by the work of the Social Science Association in Boston. There are now public school art societies in many of the cities of the country, notably St. Louis, Milwaukee, and Chicago, and gradually they are convincing the school boards of the necessity of school decoration—a subject which may appropriately be continued in the chapter on Public Buildings.

The elaborate provisions of to-day will obviously be nullified if the children do not go to school. They imply of necessity a thorough enforcement of compulsory education laws and complementary factory laws. The compulsory legislation of most States is ineffective through failure to provide for proper inspection, but it is so admirably conducted in Massachusetts and a few other States that there is no longer excuse for its non-observance anywhere else.¹

The necessities for an adequate adaptation of the school facilities to the needs of all children are first, as suggested above, the enactment of factory laws, so that every child who wants to may go to school; second, the provision of enough seats in the districts in which the children live; third, schools for defective children; and fourth, parental schools.

¹ The existing laws both for compulsory legislation and for legislation against child-labor are given in Appendix VIII.

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As we are concerned with the normal child, it remains only to speak of some parental schools of American cities. Wherever they have been established, truancy has been reduced to a minimum. The most successful ones are such as those of Boston and Brooklyn, which are located in the country, although this is a provision which is more important for boys than for girls. The Boston Parental School is at West Roxbury. It was established for the purpose of giving suitable education to children under fourteen years of age who have been habitual truants. Such children are committed by the magistrate for a definite period, but can be released before the expiration of their sentences on such terms as may be agreed upon by the superintendent of schools, the magistrate, and the children's board of trustees. The school has twenty-seven acres of land with a frontage of one thousand feet on the Charles River.

One of the oldest and most successful truant schools is that of Brooklyn, located in the suburbs on seventeen acres of ground. It consists of two three-story brick structures, which cost \$70,000, and which will accommodate over one hundred boys. The New York truant school was formerly located in the midst of the tenement district, 214 East Twenty-fourth Street, in a three-story and basement brick building, with a frontage of only fifty feet, and a playground in the back yard twenty-five by sixty feet in area. Thirty acres of land have been secured for a new truant school which is located,

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as are those of Boston and Brooklyn, in the suburbs. The truant school of Chicago was opened in January, 1902. It is one of the most complete in the country, is admirably located on spacious grounds, is even extravagant in its appointments. The necessity for it is sufficiently indicated by the fact that in 1899 over seventeen thousand juvenile offenders were brought before the courts of Chicago. It is expected that the extension of parental schools will lead also to juvenile courts like that in Chicago, so that the stigma of criminality may be minimized.

In fact, what has been said about compulsory education is applicable also to the school system as a whole. It will not attain its full efficiency until brought into active coöperation with the other institutions which deal with children. The truant schools have already succeeded in introducing juvenile courts into several cities; the coöperation between the school and the public library is assured in many cities of the country; the school is working in harmony with the scientific and artistic institutions; the playground movements are everywhere identified with the school and its teachers and executive officers. The enlargement of the curriculum makes necessary the enlargement of the schoolhouse. The larger schoolhouse makes possible greater facilities for more users, young and old. Every increment of material or educational equipment leads to more democratic culture, the goal of popular education.

CHAPTER VI

PUBLIC LIBRARIES¹

AN institution of culture, second only in importance to the public school, is the public library. The first free library of the modern type is said to have been founded by a Unitarian minister in Peterborough, New Hampshire, in 1833.² This had been preceded by many society, apprentice, and coöperative libraries of a more or less exclusive character, though sometimes meeting the demands of large constituencies and of humble people.

The first step in legislation for the establishment of public libraries seems to have been taken by the Hon. Josiah Quincy, Jr., mayor of Boston, in October, 1847. The city council passed a proposal of his to request the legislature that Boston be allowed to establish a free library by taxation. This was granted the following winter, and was probably the earliest legislation of the kind in any part of the world. This pioneer State has been followed by nearly every northern State, and the results of the legislation in many of the western States, especially

¹ For assistance in the preparation of this chapter my obligations are due Miss Harriet L. McCrory, Librarian, Cedar Rapids, Iowa.

² C. A. Cutter, "The Development of Public Libraries," *New York Evening Post*, January 12, 1901.

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those peopled by New Englanders, have been quite comparable with the progress of the parent State. Curiously enough, the two neighboring States of Connecticut and New York have been especially backward in library legislation. Connecticut had only two free public libraries supported by taxation in 1897, and New York has only very recently passed a library law.

According to Mr. Fletcher¹ five stages in library legislation are to be noted, four of which have been accomplished in several States, while the fifth one is yet to be, but is not difficult to anticipate. The first and second of these stages antedated the modern public library, the preliminary stage beginning with the incorporation of the Philadelphia Library Company in 1742, and the next, beginning with New York in 1835, providing legislation for the establishment of district school libraries. The third stage was that which enabled towns to establish and maintain libraries by taxation; the special legislation for Boston is the original instance. This was followed in 1849 by the first general State law, that of New Hampshire, succeeded in 1851 by that of Massachusetts, in 1854 Maine, 1865 Vermont, 1867 Ohio, and after 1870 quite generally by the other States, especially of the middle west.

The fourth phase of legislation, marking further progress, is found in those laws recently passed by a few States with the purpose of giving encourage-

¹ Fletcher, "Public Libraries of the United States."

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ment to the towns which establish libraries. The first of these laws was passed in Massachusetts in 1890, which gave the governor power to appoint a commission of five to encourage the establishment and growth of public libraries in the State. The results accomplished by this Massachusetts commission are entirely disproportionate to the expense to the State. An appropriation of \$500 is made for expenses, and the towns accepting the provisions of the law receive \$100 each. This involved, in 1891, an expense of \$3600 for the purchase of books, and a progressively decreasing rate ever since. A similar law was enacted in New Hampshire in 1891 with equal success, and now there are seventeen such commissions in the country. The general purposes of such a commission may be indicated by the account given in the report of the Free Public Library Commission of Massachusetts for 1901.

"The incidental and advisory functions of the commission are of a widely varied character, involving every incident and detail of library administration. Information is sought relative to the initial steps to be taken for the formation of a library ; the raising of funds ; the organization and rules ; the selection and purchase of books ; the best methods of classification and labelling ; the methods of cataloguing ; the preparation and printing of class lists and bulletins ; the selection of sites for buildings ; the plans and details as well as the materials for construction ; the heating, lighting, and ventilation ; the external ornamentation and interior finish and arrange-

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ment; the method and material of shelving; the manifold conveniences for the economic and systematic administration; the best methods of making the library useful and accessible to all the people; the equipment and management of branches; the cheapest and best methods of distributing the books to the people of all sections of the town; the relations of the library to the teachers and the public schools; the administration of gifts and bequests; the selection and compensation of librarians; the relative appropriation for the maintenance of libraries in different towns; and other details, almost without number."

Another form of State assistance to libraries is found in the comprehensive statute passed by New York in 1891, which intrusted the free library of the State to the regents of the University, and provided for assistance of various kinds to the towns, the most distinctive result being the great extension of the system of travelling libraries. Other States have followed the example of New York in providing a system of travelling libraries, and in many States they are furnished by private associations, such as the Federation of Women's Clubs. No less than forty-two States now have some form of travelling library.

Mr. Fletcher's fifth stage in the evolution of library laws, which he anticipates in the immediate future, is that which "shall make it obligatory on towns to have and to properly maintain libraries, just as it now requires the schools to be provided." Here again, New Hampshire is in the lead, having had a bill presented to her legislature during the win-

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ter of 1892-93, drawn up by a member of the State Library Commission, looking to the accomplishment of this end. It is now obligatory on a town to vote, at least, on the library question, every year.

The results of this legislation and of the long period of education which has produced it, are to be found in the extensive development of public libraries in many of the States of the country, led by Massachusetts, although there is still a black-list by way of sombre contrast. Mr. Fletcher's "Public Libraries of the United States" gives a list of four States, reporting two free libraries each, ten reporting only one, and ten reporting none; but the improvement is so rapid it is not safe to quote his list. Nebraska, which he included in the second group, has not only more libraries now, but also a library commission.

The Free Library Commission of Massachusetts has succeeded in reducing the number of towns in that State which have no free public library to four, the entire population of which is 3973, or less than one-seventh of 1 per cent of the entire population of the State; in two of these towns there are association libraries. Two hundred and seventy Massachusetts towns have libraries owned and controlled by the town and free for circulation to all the people. Thirty-six towns have free libraries in which the town has some representation in the management. In twenty-seven towns there are free libraries to which the town appropriates money, but is not represented in the management,

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and in fourteen towns there are free libraries which have no connection with the town, while two towns have the free use of public libraries in other places.

The numerical results of the movement for free public libraries have been admirably summed up in the *International Monthly* by Mr. Herbert Putnam, librarian of Congress.

"Small wonder, then, that with such influences at work libraries have multiplied in the United States,—multiplied in a ratio that is progressive. The total number established between 1875 and 1896 was 3546, as against 2240 established between 1850 and 1875. In 1876 the number reporting 300 volumes or more each, was 2039; in 1896 they had become 4026; and their contents had in the meantime nearly trebled. The total number of volumes reported in 1876, by 3647 libraries having 300 or more each, was 12,276,964; the total number reported in 1896, by 7191 libraries, was 34,596,258; 567 of them reported in 1896 realty owned to the value of \$33,000,000; and 605 of them endowments exceeding \$17,000,000,—aggregates both of which must have enlarged considerably since that time. For, during the past decade alone, there have been erected or begun, five library buildings costing more than \$1,000,000 each, whose aggregate cost will have exceeded \$15,000,000;¹ and various others, each of which

¹ The Library of Congress \$6,400,000 (with land \$6,950,000); Boston \$2,500,000; Chicago \$2,000,000; New York \$2,500,000 (a

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will represent an expenditure of from \$100,000 to \$700,000 each;¹ while buildings costing from \$5,000 to \$100,000 now dot the country. These latter very largely, and the more costly in part, are the result of private gift."

The modern library is a complex educational institution with broad democratic functions, defined by a long and successful period of development, and very different from the ancient library. Mr. Putnam says:—

"The motive of the old-time library was accumulation; the motto of the present is use. The former was content to respond to demand; the latter seeks also to create it. The constituency of the former was, in consequence, only the student-scholar, who knew the value of books and had positive need of their service; the constituency of the latter has no admitted limit within the legal area. For it conceives the possible service as extending to every man, woman, or child, whom any worthy book may serve in any worthy way."

The educational functions of the library are, first, to provide books; second, to administer them wisely; third, to create interest in them.

In providing books, a well-equipped library will supply: first, reference books; second, a circulating department with numerous branches; third,

minimum); Columbia \$1,250,000; Pittsburg (Carnegie) \$1,200,000 (chargeable to library).

¹ For example, Madison, Milwaukee, Newark, Princeton, Providence.

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special opportunities for children ; fourth, periodicals ; fifth, facilities for the student. Many of the great libraries of the world have been simply reference libraries. This is true of the British Museum, the National Libraries in Paris and Berlin, and the Congressional Library in Washington. In some American public libraries, as well as in many private ones, special provision is made for books of reference. The chief American example is probably that of the Boston Public Library, in which the 770,000 books circulate fewer times than one-third of that number in Philadelphia or Chicago. Every library, however, makes definite provision for books of reference, and all good library buildings include a special reference room. Many libraries which do not give the public admission to the shelves of the general library provide books of reference easy of access in the reference room. The provision of such books is a simple matter, requiring only judicious selection.

A more difficult problem is that presented by the circulating department. This includes two features in all well-appointed libraries,—open book shelves and branch libraries. Even the smaller places which do not have the necessity for branches which is found in the larger cities, ought to distribute books to the public school buildings ; and the libraries of the greater cities, which have larger collections of books, must nevertheless provide open shelves if they are to keep pace with the current of progress to-day.

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The first large city library to provide books on the open-shelf plan was that of Cleveland, which introduced this system fourteen years ago. The transition from the old method was effected with comparative ease, and none of the difficulties were experienced which are put forward by those who distrust the reading public. A hundred thousand volumes, two-thirds of those possessed by the library, are freely accessible to the public in the general circulation room, the reference room, and the children's room. The remaining books consist largely of duplicates and public documents. As books are drawn from the open shelves, duplicates—if they exist—are inserted, there being no "dead" or inaccessible books in the library. The method of superintendence is very simple in the temporary building which is at present occupied by the Cleveland Public Library. The book stacks, in addition to covering the walls, radiate from a central point, making it easy for three assistants to supervise the large number of books and at the same time to be of great service to the readers. The vast majority of books circulated by the library are drawn by the readers themselves from this room.

The largest library having the open-shelf system is that at Philadelphia, where nearly all of the 234,000 books are accessible to the public. The Philadelphia Free Library, which has been in operation since 1892, adopted this method in all its departments from the begin-

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ning.¹ At Buffalo, by reason of the present restricted quarters, the number of books in the open-shelf department is nineteen thousand; in the children's department there are eight thousand more. The books drawn from these two open-shelf departments outnumber those which are drawn from the rest of the library.²

The experience of all these large libraries justifies this method, in that a much more intelligent circulation is secured, the difficulties of administration are reduced, and economy results. No more books are lost than by the system of restriction and red tape which prevails in Boston and Chicago, where there are, it is true, a certain number of

¹ Mr. John Thompson, the Librarian, says:—

"I have no hesitation in saying that there is no limit whatever to the number of books to be placed on open shelves. If open shelves had been risky (from the point of protection), there is no doubt that the danger would have been felt in a city of the size of Philadelphia. In small cities and towns the readers are known to the attendants; in cities like Chicago, New York, and Philadelphia, of course, the larger number are unknown. The loss from theft has in our case proved insignificant. The number of books lost in a year does not amount in value to the salary of one employé. The safeguards of closed shelves would require the services of several attendants, and the difference between closed and open shelves, so far as the services of the public is concerned, does not admit of discussion. Persons using libraries by means of catalogue cards only, cannot gain one-third of the benefit that is procurable by a person who has free access to the books themselves."

² Among other libraries which follow the same plan are Milwaukee, Denver, Kansas City, Missouri, Newark, New Jersey, Dayton, Toledo, Worcester, and Springfield, Massachusetts, all of them large libraries; and it is in general use among the smaller public libraries.

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books in the reference department, fifteen thousand in Boston and fewer in Chicago, but a very small proportion of the total volumes, in each case, and these not for circulation. In San Francisco the main library, which is in the City Hall, has few books on open shelves, though the plan is in vogue in the sixteen branch libraries—a common practice elsewhere. The St. Louis library has an open-shelf room, containing chiefly new books arranged by classes,—a section for high-grade fiction, several sections of miscellaneous fiction, travel, history, biography, essays, foreign fiction, and a collection of duplicates (multiple copies of new books).

At the Warder Library in Springfield, Ohio, not one book was lost from the open shelves last year out of the twenty-five thousand books to which the public had access. There seems to be but one limit, due to the size of the library, to the practicability of this plan ; it might not be desirable to give the general public access to a vast number of books, because of the resulting confusion in their use. The number made accessible in Cleveland, one hundred thousand, would probably include most of the books wanted by any but the most diligent student.

In Buffalo the open-shelf department is made more interesting and useful by the display of collections of books on topics of current interest, with reading lists, maps, and bulletin notes. "A collection of about thirty-five books, with reading lists and map, on the subject of England and the Transvaal was placed on the special topic shelves

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one afternoon, and the next morning the map and the reading list alone were left to represent the exhibit." What has been said already will be enforced further by the testimony of the Buffalo librarian: "The whole work of this department is done by a force of three assistants, and a boy to put up books, and even taking into account losses from theft, which do and will occur, it costs less than half as much to circulate a book from this as from any other department of the library.

At Providence the open-shelf system is made useful by a departmental arrangement so that related books may be used by the student in an appropriate room, or may be borrowed from there as well as from the general delivery desk. Mr. Foster, the librarian, has added to the scientific, art, and other departments, a room in which there is a collection of the best specimens of the world's literature in fine editions.

Mr. F. M. Crunden introduced at St. Louis, twenty years ago, the practice of supplying a large number of duplicates of the best novels to be loaned for a week at a time for a charge of five cents a volume. This met with such success that he has advocated the plan ever since, although it has only recently been adopted elsewhere. In this way he has been able to provide fifty or a hundred copies of popular novels without any burden on the funds of the library or encroachment on the privileges of other readers. He has also been able to add to the library by the same

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system fine editions of standard novels. The plan was introduced in Milwaukee in 1899, with equally gratifying results. The librarian reports that 376 books were bought at a cost of \$374.70. The rebinding of 40 of this number cost \$14.00, making a total expenditure of \$388.70. The balance to the credit of the fund on August 1st, 1900, was \$33.81, which paid for the clerical work involved. A similar report is made by the Springfield, Massachusetts, library, which charged in the beginning two cents a day, as does the Cedar Rapids Library, thus causing an earlier return of the books. The price has now been reduced at Springfield to one cent a day.

One of the most significant developments of the modern public library is its branches. This is the most notable feature of the Chicago Public Library, which had until recently the largest circulation in the country, only this last year being overtaken and passed by that of Philadelphia. This circulation took place chiefly through six branches and twenty-seven delivery stations. The recent gift of Mr. Carnegie to the New York Public Library for its branches enhances the possible usefulness of that great united institution, which, with the other public libraries of New York, can now be given credit for much the largest number of volumes and the biggest circulation in the country, since the union of the Astor, Lenox, and Tilden foundations gives the metropolis for the first time a great public library.

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The most marked progress has been made by the Free Library of Philadelphia, which had a circulation last year of 1,915,255 volumes from the main library, 12 branches, the children's library, the library for the blind, and 104 travelling libraries, including "seventy-seven fire, police, and telegraph stations, besides schools, reading clubs, and a large variety of useful associations, many working men's and boys' clubs, Grand Army posts, and other gathering places of young and old."¹ The Free Public Library of Philadelphia further extends its usefulness by a system of free lectures at its branches. One course of lectures at the Widener branch attracted an audience of eight hundred.

The experience of the Cleveland Library may indicate the importance of branches.²

"Formerly this entire library work was confined to the main library. The first extension was by the issue of small collections of books to teachers for the benefit of their pupils. This was carried on largely between 1889 and 1892, from three thousand to five thousand volumes being used throughout the year in this way." In 1892 the

¹ The circulation of this library has been so phenomenal that the statistics should be given from the beginning.

1893	228,116	1897	1,672,684
1894	632,536	1898	1,738,950
1895	1,053,745	1899	1,778,387
1896	1,354,002	1900	1,826,637

² Report of the Cleveland Public Library Board, 1900.

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first branch was established. In 1894 a second branch was opened, a third in 1896, and the fourth in 1897. "These branches contain from twelve thousand to seventeen thousand volumes each, and include a reference collection and a reading room. They are kept open during the same hours as the Main Library. . . . The sub-branches are four in number. Each of these has a collection of books for circulation, a few reference books, and a small reading room. . . . Forty special collections, each in a case, have been made for use in the fire stations. At the time of making this report they are in use in twenty-six stations."

The superiority of branch reading rooms with loan collections over mere reference branches or delivery stations, has been happily expressed by Mr. Chesley R. Perry, of the Chicago Public Library: "It must be conceded that branches wherein librarians can secure personal contact with the people, and can have a supply of books at hand to issue then and there, are far beyond, in all ways, the delivery stations which are only points where the library boxes are thrown off as are mail-bags at railway stations."

The Carnegie Library of Pittsburg has in operation six of the seven branch libraries provided for by Mr. Carnegie. They are located in admirable buildings of their own, and are admitted by the authorities to render better service than the main library, furnishing, among other facilities, open shelves and special arrangements for children.

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The Pittsburg library last year sent books to seven of the city playgrounds and the vacation school; many of the children who had used cards in the playgrounds transferred them to the branch libraries at the end of the six weeks. The Boston Public Library supplies books, especially for backward children, to the vacation playgrounds. The Brooklyn Public Library inaugurated a plan last summer of loaning standard works on natural history, such as those of Agassiz, Abbott, Burroughs, Thoreau, Du Chaillu, Guyot, and Thompson, through a Park branch, located in the Administration Building of Prospect Park. Two hundred and fifty volumes were placed there on open shelves, and were usually borrowed for the day only by visitors to the park. What might popularly be called a travelling branch has been instituted by the Springfield, Massachusetts, library, which delivers books now to one hundred and fifty homes for five cents a week, a popular substitute for the Book-lovers' Library.

A third feature in the provision of public library books to-day, and one of the most important, is regard for the children. This begins now in the work of the architect, who must make a place in his plan for special space not only for juvenile literature but for a children's room. Even libraries which are accommodated in old buildings find a room or a corner for the children.¹

¹ Among those which give the youngsters exceptional consideration are the libraries of Philadelphia, Cleveland, Buffalo, Milwaukee,

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An indication of the comprehensive character of the library work for children is given in the account of the methods of the Brookline Public Library, as reported by the Free Library Commission for 1900:—

"The most important development in the public library of Brookline has been an extension of its work with the public schools. The chief characteristics of the work undertaken have been: First, visiting the schools by the assistant, to learn the needs of pupils and teachers; conferences with the teachers at the library, to aid in the selection of books; and the preparation of printed lists. Second, issuing to teachers, besides the seven books allowed for their personal use, twenty or more books each, drawn either from the special collection in the school reference room, which contains many duplicates, or from the main library, to be used by pupils in school or at home, in connection with their lessons or simply for recreative reading. Third, the special assistant has charge of the school reference room during the afternoon, and assists pupils who resort there for the purpose of looking up topics of study or for collateral reading. The room is entirely distinct from the regular children's room, with a seating capacity of ninety, and some six hundred volumes for recreative reading. Fourth, systematic instruction in the use of the library is given by the assistant in charge to St. Louis, Detroit, Worcester, Newark (New Jersey), Providence, and many smaller libraries.

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the pupils in the eighth and ninth grades of the grammar schools and the first year in the high school, who are brought to the library in classes, accompanied by their teachers. The lowest grade is taught about the make-up of a book, the title-page, copyright, table of contents, and index, and how to use them; also the chief facts regarding the binding, and the use of the commoner reference books; the next grade take up more advanced reference books, and learn to use the card catalogue; while the high school students are doing some simple bibliographical work."

The Buffalo library now provides over eight thousand books in the children's room, the circulation of which in 1900 was over one hundred thousand. A frieze of burlap extends the full length of the reading room and serves as a background for the display of pictures of interest to the children, gathered and mounted by the assistants. These pictures are also kept in large number to be loaned to the schools.¹ Everything about the room is suggestive of child-life, and even the furniture is adapted to the necessities of the little ones, there being tables of various heights and chairs of several sizes. On Saturday mornings readings are given the children by the assistants in a special room set aside for the purpose, and this feature, which is called by the children "the theatre," finds crowded houses at every performance. In Pitts-

¹ This is also done in Boston, Springfield (Massachusetts), St. Louis, Providence, Cleveland, and elsewhere.

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burg a systematic preparation is made for the children's "story hour." "An outline of sixteen stories from the 'Iliad' and 'Odyssey' was prepared and the stories told simultaneously at the Central Library and branches. The children's librarians attended seven lectures on Homer given at the Central Library for the Training Class."¹

The Buffalo library also makes a point of providing special reading lists for children and for teachers in the guidance of children. One of these is an admirable bibliography on American history for young folks. Another is an excellent list for boys and girls from fourteen to eighteen years old, devised to effect the transition from the children's room to the main library. A still more elaborate list, called "Classroom Libraries for Public Schools," listed by grades (to which is added a list of books suggested for school reference libraries), brings up another feature of the Buffalo library, the loaning of books to the public schools. This library now supplies 30 schools with 457 classroom libraries, containing 20,346 books. These were drawn by the children to take home 194,045 times in 1900, an increase in circulation over the year before of 59,617, or 44 per cent.

The Buffalo library also has the provision of reference books for the schools, purchased by a fund supplied from Albany, on the basis of exami-

¹ Report of the Carnegie Library of Pittsburg, 1901.

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nations of the schools made by the Regents of the State University.

A most extensive system of coöperation with the schools is carried on by the public library in Cleveland. Collections of fifty books are selected by the teachers with the assistance of the librarian and placed in the schoolrooms for circulation, not only among the children, but among other residents in the neighborhood of the school. The teachers have the privilege of exchanging these books in part or in whole at any time. In this way books have been placed in more than one hundred schoolrooms. This plan is now superseded in many outlying districts by the system of placing a larger collection of books in the building for the benefit of the whole school and putting in charge of these an assistant from the library.

This coöperation with the schools has been carried on in Detroit for thirteen or fourteen years; eighty boxes containing over ten thousand volumes now circulate in all grades above the fourth. In St. Louis the public library not only circulates collections of books through the schools to the children and parents at the discretion of the teachers, but also has a system of providing in the school boxes thirty duplicates of the same book. According to Mr. Crunden, the librarian:—

“It is better to send thirty copies of the same book than thirty different books for two reasons: first, because it enables the teacher to have class exercises; second, because the interest of each

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pupil is greatly intensified when all his classmates are reading the same book. It gives them all a common subject of conversation, an edifying topic to supplant the vulgarities of boys and the inanities of girls. And this is one of the incidental benefits of literature in the school, which is of no small importance."

At the present time 355 such sets are in circulation in the schools.¹ One school in St. Louis, the Columbia School, reported in eight months, 1898-1899, that 700 pupils had read 10,000 books, which were indorsed by the principal and librarian as "good books."

In connection with the Cleveland Public Library there has also been started an organization, the plan of which has since been followed elsewhere. This is the Children's Library League, which appeals to the children to assist in the care of library books. On March 29, 1897, a bulletin was posted in the library inviting children to join a league which would do for the books what the children attempted under the inspiration of Colonel Waring in caring for the New York streets. Before the organization was a year old it had a membership of fourteen thousand, one large mass meeting had been held, attended by over eight thousand children, and interest had been developed, also, by sectional meetings and reading clubs. A series of bookmarks has been issued by way of

¹ F. M. Crunden, "The School and the Library," Proceedings, N. E. A., 1901.

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encouraging the good use of books. The first of these, which follows, was the familiar one written by the Rev. H. D. Maxson, and first used in Menomonie, Wisconsin; now in service, also, in Milwaukee, Dayton, and elsewhere.

LIBRARY LEAGUE BOOKMARK

“Once on a time” a library book was overheard talking to a little boy who had just borrowed it. The words seemed worth recording and here they are:—

“Please don’t handle me with dirty hands. I should feel ashamed to be seen when the next little boy borrowed me.

“Or leave me out in the rain. Books can catch cold as well as children.

“Or make marks on me with your pen or pencil, it would spoil my looks.

“Or lean on me with your elbows when you are reading me. It hurts.

“Or open me and lay me face down on the table. You wouldn’t like to be treated so.

“Or put in between my leaves a pencil or anything thicker than a sheet of paper. It would strain my back.

“When you are through reading me, if you are afraid of losing your place, don’t turn down the corner of one of my leaves, but have a neat little bookmark to put in where you stopped, and then close me and lay me down on my side so that I can have a good, comfortable rest.

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"Remember that I have to visit a great many other little boys when you are through with me. Besides, I may meet you again some day, and you would be very sorry to see me looking old and torn and soiled. Help me to keep fresh and clean, and I will help you to be happy."

The provision of periodicals is another feature of the public library, including usually several copies of the popular magazines and as wide a range of technical journals as is demanded by the constituency, together with daily newspapers, occasionally embracing those of most of the chief cities of the country. The monthly periodicals are sometimes circulated by the larger libraries with restrictions limiting the time for which they may be borrowed, which is unnecessary where they are loaned for five cents a week, as in St. Louis and elsewhere. The smaller libraries are usually content with providing them in the periodical room, which is one of the architectural features of the best library buildings.

A final provision of the library is necessary to meet the needs of the students. As has been said before, there was a time when the library was designed for the serious student. It is doubtful if his advantages have been curtailed anywhere because of the growing democracy of the library, and certainly in many cases they have been enhanced. The Boston Public Library affords opportunities for the students, resident and foreign, such as

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are to be found in few university libraries.¹ A most important addition to the library was made in 1898, when the department of documents and statistics was added and put in charge of Mr. Worthington C. Ford. The nucleus of this department was the gift by the American Statistical Association of its valuable books and documents. While this department contains many interesting and curious manuscripts, it is chiefly notable as a "statistical laboratory," where governmental reports and both printed and unprinted statistics from all parts of the world may be easy of access to the student. Smaller libraries sometimes have notable collections of books in some special department, as the David A. Wells economic library owned by the Springfield, Massachusetts, library, and the several departments of the Providence library.

The great reading rooms of most of the best libraries of to-day are adapted to the use of the student, and in many cases private rooms are furnished for special investigation. The Chicago Public Library, which places great restriction on the circulation of many of its books, nevertheless gives unusual facilities for students on the premises. Many of the libraries prepare special book lists for students,

¹ Among the special features of the Boston Public Library are the Galatea collection on the history of women, 1569 volumes; the Codman library of landscape gardening, 714; military library, 821; industrial arts, 11,000; fine arts, 18,151 books and 18,725 pictures; the Allen A. Brown library of music, 8644 volumes.

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not often necessary for the scholar, of course, but frequently useful to the average student. The Providence Free Library was a pioneer in an effort, which many libraries now make, to meet the needs of university extension students, not only caring for the travelling libraries which are sent to them, but gathering special books and magazines from their own stock, and frequently purchasing books which are in demand. The Carnegie Library, Pittsburg, not only duplicates the university extension travelling library sent to it, but provides virtually every book and pamphlet mentioned in the syllabus, and makes a special announcement for each one of the many lectures given in the hall.

The Cleveland Public Library has fitted up a room for the Women's Study Clubs and prepares on demand references for the subjects of their discussions, keeping on hand a complete set of the programmes of the various clubs of the city. The liberal regulations of this library also encourage serious reading, especially favoring the teachers of the city. Two of the rules relating to the use of the library are significant enough to quote:—

“5. Only two books may be drawn at the same time, except that two volumes of the same set may be counted as one book. In cases of special urgency only, an additional book will be issued on payment of a fee of ten cents for the two weeks, and subject to the usual fine for overdetention. Teachers' cards, however, may be issued to teachers in public and in regularly organized private

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schools of the city, on which three books may be drawn at a time in addition to those to which such teacher is entitled as a resident of the city, such additional books to be such as may be of use in preparing school work. No book may be kept longer than two weeks, but may be redrawn once for the same period."

"II. For the convenience of those leaving the city for the summer, five books may be issued on one card on and after June 16th, to be returned not later than September 1st. Any books so issued must be returned at the expense of the borrower at any time after the expiration of four weeks if required. From this rule all fourteen day books and all books in active demand are excepted."

Having the books to meet the various demands, the second problem of the public library is to administer them wisely. This requires in these days an efficient and well-educated librarian and trained assistants, an intelligent library board with lofty ideals, the highly developed machinery of modern library classification, and coöperation with other municipal institutions. The librarian of to-day is no longer the mere scholar of the past. He may be a scholar, but he must be an administrator. So complicated an institution as the main library, with its many departments and relations to a multiplicity of outside institutions, with its large staff of employés, and its important financial processes, requires a high degree of executive ability. Mr. Putnam says:—

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"The American librarian (unlike certain of his brethren abroad or of an era past) recognizes no equality in methods which are different. Either his method is better than his neighbor's, or worse. In the one case he must convince his neighbor; in the other he must convince himself. But an effort to convince there must be. So he has formed associations, with conferences whose purpose is comparison of experience and the discussion of possible improvements in method,—the American Library Association, created in 1876 and now numbering over five hundred members, and various State and local associations, at least twenty-five thus far, numbering over two thousand members."

The trained assistants furnished by the library schools of to-day share with the librarian of executive ability the honor of increasing the utility of this great democratic educational institution. There are now four professional library schools, namely, one at each of the following cities: Albany, Brooklyn, Philadelphia, and Champaign. These offer courses of from one to three years each, and elsewhere are many library classes. The Cleveland Public Library, for instance, conducts a summer school, in which its own attendants and candidates for positions secure preliminary or added training. The Carnegie Library at Pittsburg conducts a training class for children's librarians, in coöperation with the Kindergarten College. A fee of \$50 a year and the time given to apprentice work fully reimburse the library for the lectures

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and classes, while a special class of library assistants is being prepared to care for the growing work with children. Many of the small libraries, such as that at Cedar Rapids, Iowa, give training to library assistants as a means of securing the aid which the library's finances would otherwise preclude. These students usually spend a year, which is recognized to be only preliminary to the subsequent specialized training of one of the professional schools. To make a small library successful to-day, it becomes almost indispensable for the librarian to conduct a training school.

A large amount of the aid given to readers must take the form of personal assistance. Even the more serious student will often need information beyond that furnished by the catalogues and indexes, and the average inquirer demands of the library staff little short of omniscience.¹

¹ Aside from routine subjects, some of the several hundred topics on which information was sought in a few weeks in the Boston Public Library are the following: —

A lantern of the fourteenth century; Statistics of gas and water in large cities; Statistics of females employed in factories; Coat of arms of Florence; Motor engines; Libby prison; Date of eruption of Krakatoa; Method for the cornet; Toasts; Egyptian customs; What Irishmen have done for the country; Feldspar; Date of the building of the Tower of London; Inventions; The Stock Exchange; A poem for April and June; Warships; Is a territory represented in Congress? Ornamental alphabets; Number of deserters during Civil War; Art of the fifteenth century; Japanese mythology; Picture of Traddles; Origin of numbers; House furnishing; Agricultural statistics of Georgia; Plumbing in the Roman towns; Price of 100-trip ticket to Wellesley; Cultivation of coffee;

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The classification and cataloguing of the material in the library, as is well known, has become an elaborate system, requiring great technical knowledge, and in its results furnishing facilities for the reader such as were unknown in the old libraries. The catalogue of the library of to-day includes not only cross references, author and subject indexes, but cards giving the analysis of the contents of books, essays, magazines, and other publications, in which important chapters or articles might be lost. The analytical catalogue has been carried to a high degree of perfection in the Cleveland Public Library, where a very large number of cards have been prepared to assist the readers in finding obscure writings. The application of the analytical catalogue to periodicals resulted in the publication of the cumulative index, in which the familiar method of Dr. Poole was applied to a smaller number of periodicals and elaborated with analyses so successfully that it has finally been taken off the hands of the Cleveland library and is issued by a publishing firm, making it available for all libraries.

Another Cleveland device worthy of mention, practised also in St. Louis and other public

Glue and mucilage making; The first Thanksgiving; Toleration act of Maryland; Sleep; Government of Ireland; A Turkish Bible in German; Fluctuations of cotton in 1895; Account of the "Blessing of the Bay"; Defence of mathematics; Manufacture of fibre goods; Dutch painters of nineteenth century; Chateaux in France; The Tersanctus; Emancipation in the West Indies; Pierre de Provence; Popular election of United States senators; Maya language; Vestal virgins.

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libraries to-day, is the card catalogue in the children's room. This is in the hands of one assistant, who by constant supervision is able to provide an extensive card catalogue in simple terms which may be comprehended by the children, and yet making use of the analytical method, so as vastly to increase its value.

The chief qualification of a library board is a willingness to employ the best librarian available and to indorse his proposals with the minimum of interference. An arrangement such as is secured in Buffalo by the coöperation of the old private library trustees and the municipal authorities, the latter being represented by the mayor, the comptroller, and the public school superintendent, or a system such as prevails in Cleveland, where the library is directly connected with the school system, certainly results in successful administration, while a library board appointed by the mayor, as in Chicago, frequently proves unprogressive, to say the least.

Another administrative function of the public library is to coöperate with all kindred city institutions and interests. The relation of the library to the public school has already been mentioned, and the coöperation which is also found in Philadelphia and many other cities with the fire and police stations, suggests the possibility of a further extension of these advantages to telegraph stations, reading clubs, workmen's clubs, jails, department stores, missions, settlements, and many similar public or philanthropic institutions. There is a very impor-

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tant work done by the libraries of Boston and Pittsburgh in circulating boxes of books in the homes. A little child in some household will assume the responsibility of librarian and loan the twenty or thirty volumes, just as in a branch library. This leads very commonly to reading clubs conducted by the children's librarian or perhaps some friend or teacher, making use of a natural group of ten or a dozen children to provide them with both recreation and instruction. The field of coöperation may be extended also to special professions and organizations. Some libraries meet the needs of musical clubs which want opera scores and other musical compositions. The Free Library of Philadelphia is not alone in supplying architects with expensive books on architecture, which could not be purchased by the average library. Indeed it is unusual for an institution as democratic as the Philadelphia library to be able also to specialize as it does in some of its more valuable collections. There is in this library one of the best collections of *incunabula* in the country, including no less than five hundred books printed before 1501.

Having secured a comprehensive collection of books and provided for their administration, it becomes necessary to create an interest. There is what may be called legitimate advertising outside the library. It is not unusual for a library to publish lists of books in the newspapers when any important new accessions are received or when some subject of special interest is before the public, as

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in the case of a lecture course or some national or international event of popular interest. Placards and posters are often put up in schools, hotels, and other public places. Within the library there is always provision for bulletins, which furnish the opportunity for the special announcements of the library, but are also used for disseminating valuable information which will indirectly contribute to the circulation of books. Exhibits are sometimes held of arts, industries, or sciences, especially when the library is housed, as is often the case, in the same building with an art gallery or a museum. Some of the smaller libraries provide various forms of entertainment and instruction for the children, having only a remote connection with the primary function of the library, but with the expectation that the cultivation of an interest in the institution will lead to its proper use.

In small cities the public library, when blessed with an enthusiastic, skilled librarian, becomes the chief social centre for the masses. What is undertaken in the larger communities through school extension in the effort to make the schoolhouse a social centre, may here appropriately be accomplished through the public library. In the small cities the choice of the institution will be decided largely by the relative amount of interest and knowledge possessed by school principal or librarian. In many cases the library is leading in the larger interpretation of education which is beginning to determine the school system of to-day.

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While emphasis must of necessity be laid upon books in the library as it need not be in the modern school, the new spirit demands that the library should be made for man and not man for the library.

CHAPTER VII

PUBLIC BUILDINGS

THE ideals of a people soon find expression in their architecture. As our industrial progress leaves us leisure and energy for other than economic activities, we begin to see that public buildings have both utilitarian and æsthetic ends to serve, and satisfy those ends adequately only by their union. Admitting the necessity of considering art in our public buildings, we find that they have possibilities of both individual and collective beauty. Not only may each public building have an æsthetic merit of its own, but the various public edifices of a community may be grouped so as to enhance each other, while adding to their convenience and greatly increasing the charm of the city in which they are located.

The principles which are involved in any individual building may be appropriately and logically considered first in the case of library buildings ; while they must satisfy certain utilitarian ends, they must also be treated as architectural monuments. Utility will be the first determining factor in the interior arrangement of the library.¹ It is, however, both

¹ W. F. Poole, 'The Construction of Library Buildings,' Bureau of Education, Washington, 1881.

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legitimate and necessary that the interior arrangement should be adapted to economical administration, so that there would necessarily be a great difference between a reference library and a loan library ; a library in a large city, where the chief circulation is carried on through the branches, and a library in a small city where all of its functions must be cared for in one building.

The average library of the small city would include first an open-shelf stack room and delivery desk ; beyond these will be reading and reference rooms, sometimes combined in the smaller libraries. When possible in the reference room the book shelves should form a part of the architecture of the building, as they do in the case of the British Museum or the Madison Historical Library. Seminar and study rooms for the use of classes will be added when possible, adjoining the reference department and the stacks. A catalogue room and working place for the staff will be necessary in all libraries. A children's room is provided whenever possible now, preferably near the entrance and with a lavatory adjoining, the frequent scrubbing of the children's hands being an indispensable precaution. For proper administration the librarian will need a private room, which may be combined with the trustees' rooms in the smallest libraries, and whether one or both is included, a secondary use for story telling and reading will enable the plant to perform a double service. On the second floor of the library building will be found when-

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ever possible an auditorium for lectures and concerts, and in case no further provision is made for an art gallery, the auditorium may be so used if constructed with a level floor. There are numerous examples of small libraries provided with auditoriums, sometimes furnishing the only attractive small hall in the heart of the city. Among many other buildings so equipped may be mentioned the libraries of Winona, Minnesota, La Crosse, Wisconsin, Wheaton and Kankakee, Illinois, and the Carnegie libraries generally.

The small library will often have to provide for collections of art or natural history, which may be anticipated by the addition of extra rooms, although the existence of such treasures very often determines in the first instance the character of the library building. The basement, which should be well lighted, will always include unpacking and store-rooms, janitors' rooms, and often a place for government documents and similar publications little used, and, when possible, a printing-press and book bindery. Sometimes the social demands on the library are such that it is found worth while to have a newspaper room in the basement where men may smoke, as in large mining or lumber towns. Often when the libraries are not large enough to have law or medical departments, rooms are provided for the use of associations of lawyers and doctors who care to place in the library their collections of books, which the staff then undertakes to supervise.

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The usefulness of a library will be determined in great measure by the appropriateness of its building. While there are instances of attaining success with imperfect facilities, as in Philadelphia, the rapid growth of the modern library, the increasing demands on its staff and the consequent increase in the machinery of distribution necessitate the most improved architecture. These utilitarian purposes will include a consideration of the aesthetic, and in fact will be found to harmonize with the latter if treated wisely.

The site of the library may be commanding, or convenient, or both, although it must be admitted that the site of some libraries is neither. The city of Dubuque is at present erecting a library building with funds provided by Mr. Andrew Carnegie on a piece of ground given by one of its wealthy citizens. It is located at the base of the bluffs which form Dubuque's chief element of beauty, but which of necessity dwarf all the structures at their feet. The building is also located behind a church, which stands on a more conspicuous corner, and almost underneath an incline railway by which the bluff is reached. Not even the gift of a piece of land and the consequent relief from taxation of the excessively thrifty citizens of this community could justify such a location.

Among the libraries which may be said to have a convenient location are those of Chicago, Philadelphia, St. Paul, Indianapolis, Columbus, St. Louis, Cincinnati. The Chicago Public Library

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is located on land which sixty years ago was dedicated "for all time" for park purposes. It overlooks the Lake Front Park on which it might have been located, but which it does not even face. It fronts on two streets which are lined by tall buildings, and a narrow alley separates it from a third group of high buildings. It is admirably located from the standpoint of convenience of access, but it is most unhappily situated from any other point of view, and the more so that, in spite of the flatness of Chicago, a noble site was available. The Philadelphia library is very accessible on the chief business thoroughfare, Chestnut Street, between Twelfth and Thirteenth streets, but it is in a temporary building, and of course could not be expected to satisfy any other conditions than those of convenience. The element of accessibility may be claimed also for the St. Paul Public Library, which occupies the second floor of an old market building, enabling the trustees to rent the first floor of the building, which is city property, to the economical advantage of the library. No provision has yet been made for a permanent, independent building. The library of Indianapolis, which is an attractive structure, stands within a block of the chief transportation lines of the city, on a prominent corner, but it might have been very much more conspicuous and have further added to the embellishment of the city, had it been located on the circle, which is the central and determining feature of the plan of Indianapolis, and

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is only half a block distant from the present site of the library. The library building at Columbus faces the state-house square, and if it were attractive in architecture and had abundant space about it, would be admirably located, but at present it is nearly lost between the adjoining buildings.

Libraries which are commanding, though not convenient, are those of Pittsburg, Providence, Dayton, and Milwaukee. The Carnegie Library of Pittsburg is beautifully located at the entrance to Schenley Park, but is two and a half miles from the business centre, and in a wealthy residence section, which compels most of its patrons to come some distance for its use. One of the most complete and satisfactory buildings of the country is that of Providence, a happy combination of the æsthetic and utilitarian in construction, but nevertheless inconveniently situated. The public library at Dayton, Ohio, embodies a principle which must be vigorously opposed by the friends of municipal progress. It is located in the centre of a little city park, about half a mile from the heart of the business district. Dayton is one of the most poorly equipped cities of the country in the matter of park space, and could ill afford to spare a square foot to accommodate a public building. The library could much better have been located in a more accessible place, which might have been equally commanding, and would not have taken up space dedicated to recreation. Milwaukee has provided itself with one of

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the finest public library buildings of any city of its size, but it is located at least a mile from an appropriate situation for such a building; and although it is on an elevation surveying the main street of the city, it is difficult of access for most of the inhabitants.

Many of the cities have had the good fortune or wisdom to choose locations which are both commanding and convenient. The first and most distinguished instance is that of Boston. The old building on Boylston Street, opposite the Common, was possibly more conveniently located, but the comparative accessibility of the present site and its magnificent position fully justify it. The building faces on Copley Square, a triangular piece of ground formed by the junction of two streets. On the right is the Art Gallery, on the left the new Old South Church, and *vis-à-vis* Trinity Church, H. H. Richardson's masterpiece. The library building, designed by Mr. Charles McKim, of the firm of McKim, Mead & White, is strongly individual and appropriate, though belonging to the Roman Renaissance type of architecture and suggesting the Bibliothèque Ste. Geneviève at Paris. The cornerstone was laid November 28, 1888, and the building completed in February, 1895, at a cost, exclusive of the land, but including all the decorations contracted for, of \$2,368,000.

The new public library of New York City will be as commanding in situation as that of Boston, and as convenient in location as is possible in

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Greater New York. The old reservoir at Fifth Avenue, Forty-first and Forty-second streets, with its quaint and attractive vine-grown Egyptian walls, has yielded to the modern pseudo-classic building which is to house the great combined library of the Astor, Lenox, and Tilden foundations. It is very doubtful if the building will be as successful as the location. The public library at Buffalo is happily situated on a triangular piece of land which terminates in a little square bordering Main Street, where the Soldiers' Monument is situated. Owing to the irregularity of the streets, many of them converging at or near this point, the library is given a very commanding location. The Carnegie Library at Allegheny, in contrast with that at Pittsburg, is admirably placed, diagonally opposite the corner of one of the little parks, on the main business street, within a block of the chief railway station ; in fact, an ideal situation.

The appropriate location for a library is sometimes not secured, of course, because of local jealousies or private interests. This is especially true where a city is divided by a river into two sides, which have a historic rivalry or antipathy. The city of Aurora, Illinois, has finally compromised, after months of controversy, on a site for the new Carnegie Library building on the island which lies between the two branches of the river,—a location which is so satisfactory that it ought never to have been brought into dispute. The city of Cedar Rapids, Iowa, is unable to decide on the location

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of its new library building because of the hope that a large area of new ground will be made in the midst of the river, which, if done, would provide a much more suitable site than is to be secured in the city at present.

The location and character of a public library building are sometimes complicated by the fact that it must also serve to house a museum or an art gallery, or both. Among the cities which have museums in connection with the library may be mentioned Woburn, Massachusetts, Milwaukee, and Dayton. The chaste little classic structure which houses the library at Winona, Minnesota, contains also an art gallery, as do a number of other minor libraries. At present the library buildings of Minneapolis, Pittsburg, Buffalo, and Kansas City include both museums and art galleries. In the course of time the Carnegie Institute at Pittsburg will doubtless be so enlarged as to make special provision in separate buildings for these several institutions. The plans are nearing completion in Buffalo to relieve the building occupied by the library of both the gallery and museum. Buffalo is to have a half-million-dollar art gallery in one of its parks, and the Academy of Science is about to provide independently for the scientific collections.

This suggests that among the chief public buildings of some communities are those dedicated to art or the natural sciences. Important museums of natural history may be found in New York,

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Philadelphia, Chicago, and Davenport. The most pretentious of these is the Natural History Museum, west of Central Park in New York, the extensive grounds and buildings of which belong to the city, while the trustees, the city, and private subscriptions provide the funds. The Field Columbian Museum, in Jackson Park, Chicago, has a more modest counterpart in the Academy of Natural Sciences in Lincoln Park on the North Side, and is destined some day to have itself a more convenient and magnificent edifice in the Lake Front Park. Among the smaller cities of the country, Davenport stands conspicuous as having an unusually large and fine collection of natural history specimens housed in a special building, which has long since proved so inadequate as to necessitate an annex in the form of a large structure formerly used as a church, at least twice the size of the original building. The educational value of this institution to Davenport somewhat neutralizes the effect of the ugly buildings which contain the collections.

Cities which boast of notable art galleries are Boston, New York, Washington, Chicago, Philadelphia, Providence, Springfield (Massachusetts), Milwaukee, St. Louis, and Syracuse. While these are seldom municipal institutions in the same sense that the public libraries are, the art gallery belongs to the city, at least in the case of Philadelphia, and municipal support or partial control is found in most of the other cities.

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Two further artistic principles must be considered if these public buildings are to embellish the city as they should. The architecture should be dignified, the decorations should be appropriate. Our municipal buildings in America furnish us few examples of dignified and appropriate decoration, and yet these few contain by far the most significant mural decorations of the country.¹

The beginnings of public mural decoration in the United States belong to the forlorn story of the State Capitol at Albany, where William Morris Hunt did work which might have made that city proud and rich, had not the imperfect construction of the building insured its speedy ruin. The Boston Public Library is enriched by the famous decorations of Puvis de Chavannes, Abbey, and Sargent, which are eminent expressions both of art and thought. There are only seventeen years between the dismal strivings and failure of Albany and the architectural and decorative triumph of Boston.

Puvis de Chavannes has accomplished a remarkable piece of work in his "Genius of Enlightenment," when we take into consideration the fact that he had never seen the library and based his work on plans, measurements, and samples of the marble, and other architectural decorations. The

¹ Some of the chief minor mural paintings are in hotels and banks, such as those at the Waldorf-Astoria and Manhattan hotels in New York, and those in the Bank of Pittsburg. There is also some good decoration in Bowdoin College Art Gallery.

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subject is eminently appropriate, and nothing could add greater dignity to the magnificent entrance, which these paintings grace so happily by being seen at once on entering the door, although their full significance is only apparent on ascending the stairs. At the same time, as has been pointed out by Pauline King,¹ the great artist was not at his best, and the result, while genuinely decorative, is academic and strained, as distinguished from the work of Abbey, which she calls "pictorial," and that of Sargent, which she commends as perfect "decoration."

Abbey's "Holy Grail" is a magnificent series of pictures, suggestive of the joint product of Morris and Burne-Jones in the Merton Abbey tapestries; but, as was said above, while they are not as academic as the work of M. Puvis, neither are they the best type of decoration. It may also be said that their appropriateness to the delivery room in which they are found is doubtful, both because of its architecture and its use. Sargent's work, however, "The Triumph of Religion," has all the qualities of decoration, having called forth from him a wonderful expression of his best genius. The subjects which make up this great series are so well known as to need no comment, but they furnish a text for the discussion of the appropriateness of certain subjects for mural decoration. It has been said that the themes portrayed in the Boston Public Library ought to have been Ameri-

¹ Pauline King, "Mural Decoration in America."

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can. This might have been true of a city hall, if Boston had erected a building comparable in beauty and grandeur to its library; but the significance of Sargent's and Puvis de Chavannes' subjects, and even of those of Abbey, is their universality. In a great storehouse of the world's literature, local subjects for the decorations would have been insufficient.

The walls of the Congressional Library also give most encouraging testimony to the power of many American artists, and promise much for the future. The themes of these decorations are appropriate, all belonging to the legendary or historical record of the world. The Municipal Art Society of New York, in carrying out their plan of securing good work for the metropolis, are directly responsible for the mural decorations in the Criminal Court Building, where the walls pay tribute, not only to "Law" by many impressive allegories, but also to gratifying mastery in American art and to the public interest in it. The Municipal Art Society of Baltimore, by subscribing \$5000 for the decoration of the new court house, has induced the authorities to add \$10,000, insuring three great mural paintings for that stately building. The ceiling decorations of the Cincinnati City Hall had a similar origin. The fiasco of the Harrisburg Capitol is to be partially redeemed by intrusting the choice of color scheme and decoration to Abbey.

What has been said before with regard to libraries, art galleries, and museums will apply to the

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public buildings which provide for other municipal functions, such as the city hall, the police and fire stations, and the public schools. The æsthetic value, no less than the serviceability, of a public building depends on location. This is essential, if not obvious, even in the case of fire and police stations; it is indispensable in the case of a city hall. The central building of the community should certainly be the city's chief adornment. So it was in the free cities of Italy and the cities of Belgium; the architecture was not only beautiful, but expressed its purpose. As the power of democracy was felt in the Italian cities, the buildings underwent a transformation from the earlier forbidding and massive structures to the later type of architecture, suggestive of freedom, making access for the masses easy. It is difficult to say sometimes what conceptions have governed the construction of some of our public buildings.

The people are not always able to criticise the imperfect, but they usually respond to successful architectural achievements. They generally know that a beautiful, convenient, and economically constructed public building is a great tribute to municipal efficiency. The fact that the Congressional Library in Washington cost only \$6,000,000 and was built within the appropriation, is set in contrast with the Philadelphia City Hall, the most gigantic of all municipal buildings in America, which was unfinished after being in process of erection over thirty years, and is said, on good

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authority, to have cost the citizens of Philadelphia \$25,000,000. The returns given by the officials of Philadelphia to the federal government apportion only \$13,000,000 to the municipal buildings, but it is common belief in the Quaker City that the actual expenditure has been nearly twice that sum. Some description of this building may be worth giving, because it is at least the most conspicuous municipal building in the country.

The building commission which was charged with the construction of the Philadelphia City Hall was created by an act passed August 5, 1870. The first work was begun in January, 1871, and in the following August the president of the commission formally broke ground. The terms in which the building—a marble superstructure on a granite basement—is commonly described, may give some notion of what the commission, or architect, and many of the people of Philadelphia considered to be its chief aims. Its length from north to south is 486 feet, from east to west, 470 feet. It covers an area of $4\frac{1}{2}$ acres, and has a total area in floor space of $14\frac{1}{2}$ acres. The height of the tower from the ground level is 547 feet and $11\frac{3}{4}$ inches, including the statue of William Penn. This building occupies what was once the central square, planned, it is said, by William Penn to be the heart of the city, as is indicated by the four other similar squares located at what were supposed to be the possible limits of the city, and which still exist

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with Penn Square in the centre. Having abandoned this central open space, the one really great achievement of the architect of the City Hall was made necessary in order to provide a continuation of two thoroughfares which meet at this point,— Broad Street and Market Street. This is done by great archways and arcades, giving the building an even more democratic construction than that of the great town halls of the Italian cities, and a grossly exaggerated democratic feature for a city so boss-ridden as Philadelphia. The architect and commissioners, as well as most of the inhabitants, were sadly disappointed when, after planning this tower of enormous height, designed to be the tallest structure in the world, surmounted by a gigantic statue of William Penn, more than forty feet high, the authorities of the Washington Monument inconsiderately added a few feet to it, when it was too late to change the plan of the municipal building. The feelings of the loyal citizens have only been assuaged by the fact that the Eiffel Tower is several hundred feet higher than the Washington Monument. The Philadelphia City Hall provides 634 rooms for the use of the municipal officers and is probably the most complete municipal building, from the quantitative standpoint at least, in the world. Its architecture is French Renaissance, with the hideous mansard effect popular in the 'seventies, and is so little appreciated by many of the people of Philadelphia that when the Pennsylvania Railway Company sought the privilege of

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erecting a viaduct across Market Street for the relief of its passenger traffic, there were many people who thought it would relieve the street somewhat from the disfigurement caused by the City Hall. The company took advantage of this apathy to erect a cheap and ugly viaduct.

One of the other curious monuments erected recently to the æsthetic obtuseness of municipal officials is the large, dignified city hall of San Francisco. Located in a commanding position, approached by a wide street and a spacious plaza, it is modelled after an inappropriate classic type, which reminds one of William Morris's description of St. Paul's and St. Peter's.

"St. Peter's in Rome, St. Paul's in London, were not built to be beautiful and convenient. They were not built to be the homes of the citizens in their moments of exaltation, their supreme grief or supreme hope, but to be proper, respectable, and therefore to show the due amount of cultivation and knowledge of the only people and times that in the minds of their ignorant builders were not ignorant barbarians."

The city of Milwaukee has erected an enormous city hall, on the triangle formed by two converging streets, which is suggestive of a mammoth flying wedge, such as might have been erected in honor of some of the famous football contests which have been waged in that city. Another curious combination of ambitious and limited vision is found in the city hall of Springfield, Ohio. A city block

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was divided into thirds, and the middle third was devoted to the city hall, to be flanked by narrow streets or alleys. It consequently runs from one street through to another, with a tower at each end. The redeeming feature of this elongated building is a great assembly hall in one end, which is available for the free use of the citizens for any public purpose, and suggests a desirable function of the chief municipal building of any community.¹

The most beautiful city halls are commonly those of the remoter past. New York City is still using its old municipal building, dating from 1803, which presents a beautiful picture beyond City Hall Park, in spite of the towering sky-scrappers which surround it. The problem which is presented to New York in the necessity for enlarged facilities and a conformity to the surrounding architecture, when their new city hall is erected, seems almost insoluble. Independence Hall in Philadelphia, with its two wings, not only provides that city with the chief historical building of the nation, but, until the completion of the new city hall, accommodated its municipal offices in one of the most attractive colonial buildings in America.

Some cities have city halls which are imposing in appearance, while located in the midst of open

¹ Such provisions are not uncommon in the smaller cities. A special auditorium, or at least the use of the council chamber or court room, is found, for example, in Aurora, Illinois, and Marshalltown, Iowa. The town hall or ward room is a universal provision in New England.

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spaces, occasionally appropriately surrounded by other buildings, but rarely are they beautiful in architecture. Among the notable exceptions are the city halls of Providence and Richmond, Virginia, and that of Albany, where Richardson's last work stands. Many cities are beginning to appreciate the possibilities of their minor public buildings; fire and police stations are becoming more attractive architecturally; New York and St. Louis have large, well-equipped buildings for their boards of education.

In addition to the individual merit of the public building and the necessity for its being appropriate to its functions, great beauty may be added to a city by the grouping of its official buildings. Such a plan has been carried out in a measure in Washington, and is to be continued more consistently under the present commission.

The magnificent plan of L'Enfant, approved by George Washington, is responsible for the capital city's being one of the beautiful cities of the world; but the failure to take advantage of all the elements of that plan, or to be consistent with its beginnings, makes necessary the commission of to-day. L'Enfant's plan, in brief, took into consideration the topography and the supposed necessity of a water approach to the city, and then located the streets on the plan of two sets of wheel spokes laid on a gridiron, with the Capitol as one hub and the President's house as the other. Along the axes of these two buildings was projected a park, and they were

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to be connected directly by a broad street, Pennsylvania Avenue. The other public buildings were also to be appropriately grouped.

Even the fundamental features of this scheme have not been held sacred by later builders. The vista of the White House along Pennsylvania Avenue has been obscured by the Treasury and State Department buildings; curious and unsightly edifices have been erected along the Mall; the Washington Monument, which should have stood at the junction of the axes of the two main buildings, occupies a site unpardonable in its isolation, one hundred feet south of the axis from the Capitol, and several hundred feet east of the axis from the White House; the Pennsylvania Railway has been allowed to cross the Mall at grade; and, to mention but one other incongruity, last but not least, the Library of Congress has been so located that its dome diverts attention from the all-important majesty of the Capitol.

The recommendations of the American Institute of Architects, on the occasion of the centennial celebration of the establishment of the government at Washington, will fire the enthusiasm of all who read them.¹ The subject has since then been exhaustively studied by the new commission. They point out possibilities still latent in Washington, and that the influence which their realization would have on the other cities of the country is

¹ "Papers relating to the Improvement of the City of Washington," Senate Document No. 94, 1901.

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immeasurable. The construction of the Houses of Parliament in London, on the Gothic model, though not an unqualified success, was the most important architectural event of the nineteenth century in Great Britain, and led to the revival of the minor arts as well. Even greater service will be rendered the cities of the United States when the noble plan of L'Enfant, projected at the beginning of the last century, shall be reincorporated in the best expression of the new century, happily now assured by the appointment of the present excellent commission, Messrs. Daniel H. Burnham, Charles F. McKim, Frederick Law Olmstead, Jr., and Augustus St. Gaudens.

A few instances in which public buildings have been appropriately grouped suggest the advisability of having a supervising commission in every city. Such a commission would have as its first work a task similar to that set the commission in Washington, to nullify the mistakes of predecessors. In Boston, special regulations were made controlling the prospective buildings on Copley Square, and a desperate fight has already resulted from the attempt to control one of them. Pittsburgh's magnificent court house, one of Richardson's great achievements, is entirely lost to view, tower and all, from the west now, owing to the erection of a sky-scraper immediately in front of it on the other side of a narrow street.

Even a community like Chicago, which has redeemed from the marshes nearly all of the land on

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which it is located, and could have adopted any plan for street arrangement or location of its buildings, has nevertheless not the slightest suggestion of relation between the different public buildings, and did not have in the beginning, nor even after the experience of many years, when the great fire made reconstruction possible. A proposal is at last being agitated to group subsequent buildings on the lake front.

Serious consideration has been given to such a plan in Cleveland, and the public library is occupying temporary quarters now in anticipation of the consummation of such a project. Instead of renting accommodations when it was compelled to move recently, the trustees erected a building at a cost of \$35,000, thinking that this investment and interest spread over five years would be more economical and more convenient than renting rooms, while it at the same time showed their faith in this grouping plan. A like proposal has been recently made by the Commercial Club in Cedar Rapids, Iowa, which would involve the filling in of a portion of the river front, on which might be located the Carnegie Library, the new city hall, the new high school building, and perhaps other public edifices. The city of St. Paul, which has a magnificent new state house now nearing completion; a good federal building, facing the angle of diverging streets, with an attractive park behind it; a pretentious city hall with spacious streets adjoining; and the prospect of a fine new library build-

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ing in the near future, might coördinate all of these and add some beautiful vistas to the neglected river front by a slight alteration of its streets.

A number of buildings are grouped about Lafayette Square in New Orleans, including the city hall, Academy of Music, St. Patrick's church, First Presbyterian church, and Odd Fellows' Home. Richmond, Virginia, in addition to a system of well-scattered squares, has in the centre of the city Capitol Square, in the midst of which is the capitol building, with the Governor's Mansion on one corner, and the city hall and St. Paul's church on another. In Charleston, South Carolina, the court house, post-office, city hall and St. Michael's church are grouped about the plaza. One of the somewhat fortuitous but interesting indications of possibilities is shown by Springfield, Ohio, which has the four corners of one of its most prominent street intersections occupied by the post-office, a church, the library, and the chief men's club building; symbolic, say the natives, of "administration, salvation, education, and damnation." The good behavior of the men's club has threatened to destroy the symmetry of this arrangement, which has been relieved by the erection of the attractive new telephone exchange next to that corner.

Fountain Square, Cincinnati, is a burial place of lost hopes and desires. In its midst stands the finest fountain in America; along the side, at one

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end, is the sombre pile of the federal building ; the rest of the square is bordered by mean commercial buildings, and by way of adding injury to insult the double overhead trolley system is at its worst on the loop which half the cars of Cincinnati make about the square. A recent proposal to fill up this one square of the city with a public building met with a mild protest. The Campus Martius, at Detroit, is a dignified open space of great possibilities in front of the city hall, which has been much improved of late by the abandonment of the practice of using the adjoining spacious street as the switching yards of the street railway. It was on bulletin boards placed at this conspicuous centre that Mayor Pingree used to issue his educational proclamations when the columns of the newspapers were closed to him.

The chief public buildings of American communities are the public school buildings. These structures have undergone great changes with the increase of population and the elaboration of the educational system. Nearly every large community has now one or more pretentious public school buildings, and in some communities, both large and small, the best architectural talent is employed. The primary significance of the public school building as an architectural product is that it is located in the midst of a residence district and is able to exert an artistic influence which is possible to no other public building. The city hall, the library, art gallery, or museum must, of necessity,

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be centrally located, although occasionally the branches of a public library may be architecturally attractive as are those of the Philadelphia Free Library, of the Boston Public Library, of the Carnegie Library in Pittsburg, or the Blackstone Memorial Library Branch of the Public Library in Chicago.

As has been suggested, public school buildings, more especially high school buildings, sometimes occupy a commanding position and furnish the chief architectural adornment of the city. In Duluth, the magnificent high school of stone, with a massive tower, stands on one of the great terraces rising from the lake and may be seen from all parts of the city. Omaha has a fine high school building with a lofty tower; Denver possesses one of the chief high school buildings of the country; and Sioux City, Iowa, with thirty-five thousand inhabitants, has erected a high school building at a cost of \$130,000. The high school at Dayton, Ohio, is admirably located on the river front, with a little strip of parkway between the building and the river bank. The high school building of Moline, Illinois, is an attractive pressed brick structure, standing on a bluff and furnishing the one architectural attraction of the city. The elaborate Girls' Normal School of Philadelphia has already been described.

The new Boys' Central High School in Philadelphia is one of the largest and most expensive school buildings of the country, including a great assembly

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hall, a gymnasium forty feet in height, and the alumni library.¹ It is of granite foundation with marble superstructure, having its architectural effect determined largely by a massive façade, which terminates in two astronomical observatories, silent tributes to the political influence of the professor of that department. The building, which has already cost a million and a half, is therein commensurate with the dignified extravagance of the Quaker City. It required ten years for its completion, and the increasing patronage of the high schools of Philadelphia, which are too largely centralized, necessitated the building of an annex half as large as the original building, by the time of the completion of the latter. It occupies a square 186 feet on Broad and Fifteenth streets by 395 feet on Green and Brandywine streets; the main building covering an area of 170 by 222 feet, the annex 86 by 150 feet. The interior decorations include a wainscoting of tile running up five or six feet on the wall, ceilings of hideously decorated metal, and iron stairways and rails cast in curious designs. The remarkable similarity of all these substantial decorations to those of the city hall and the Girls' Normal School is suggestive of an official taste which spares no expense to subsidize its pet contractors. The fourth floor, lighted by gable windows, is devoted to the Commercial High School, which, in spite

¹ Edwards, "History of the Central High School of Philadelphia."

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of its location at the top of the building, is so insufficiently lighted that much regret was expressed when the school was about to move to its expensive new quarters from the wagon factory in which it was temporarily housed.

The enormous amount of money which is appropriated by the boroughs of Manhattan and the Bronx in New York enables the commissioners to erect some magnificent schoolhouses. The popular school building now erected in the crowded quarters is built on a letter H plan, which gives a maximum of light and at the same time provides two playgrounds on opposite sides of the building, one for boys and one for girls. A New York law makes it compulsory to include a playground in the plan of every schoolhouse now erected, necessitating in the tenement districts, where the land is very valuable, playgrounds on the roofs of the school buildings.

Some of the high schools of Massachusetts cities are suggestive of a new era in architecture, among which may be mentioned those of Springfield, Worcester, and several suburbs of Boston. The new Brighton High School is of a modified colonial type which is being extensively used in Massachusetts cities in schoolhouses. The simplicity of this type of architecture, the ample light which comes through its square windows, pleasantly broken by the small panes, the easy adaptability to the necessary central corridor of such a building, and the traditional continuity which it pre-

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serves, all recommend it as an appropriate form of school architecture. Many of the smaller buildings in Massachusetts and elsewhere are successful adaptations of the colonial style, such, for example, as the Eustis Street schoolhouse in Boston.

Many cities can furnish individual instances of unusual and artistic school buildings. The Arundell Good Government Club of Baltimore has decorated several school buildings in that city, as has the Public School Art Society in Milwaukee. The Lawrence School, Brookline, has pictures grouped in Italian, Norwegian, French, Scotch, English, and American rooms. The high school at Springfield, Massachusetts, is not only a successful building but is also artistically decorated, having its walls well tinted, good woodwork and furniture, pleasing electric light fixtures, and further is embellished by well framed and hung pictures, by reliefs, casts, and vases. The high school at Medford, Massachusetts, is another example of the well-decorated building. The very attractive assembly hall, with its open-beamed roof, has pictures and bas-reliefs well placed in the spaces between doors and windows, and has made a very attractive use of the Parthenon frieze over the windows at the back of the hall.¹

Several excellent school buildings have been erected recently in Pittsburg, where the pernicious

¹ There is an excellent chapter by Henry Turner Bailey on School Decoration in his "School Sanitation and Decoration," in

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system of ward government does give occasional opportunities to the local boards in wealthy districts to put up good school buildings. The Friendship School is a stone example of colonial architecture unusually successfully executed. After passing within a substantial stone portico, on entering the building, one finds before him spacious staircases with well-decorated bronze balustrades and at the turn of the stairs three stained glass windows representing American heroes, through which a beautiful softened light comes to the great corridor. The various appurtenances of the building, such as mosaic floors, rough plaster walls, and electric light fixtures are also harmonious.

A number of very good school buildings have been erected recently in Indianapolis, where a firm of architects has devoted special study to the sanitary and æsthetic problems of the schoolhouse. These buildings, like the good modern schools generally to-day, include assembly halls, which not only furnish an important convenience to the school, but give an opportunity for subsequent mural decoration, thus providing one of the chief avenues for public art when the lessons of the Boston Public Library, the Congressional Library at Washington, and the Appellate Court in New York have been thoroughly impressed upon the people.

Among the Chicago schools which have been erected recently in accordance with the best scientific methods the contrast is presented between a well-decorated schoolroom and an over-decorated room.

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tific and artistic principles may be mentioned the John B. Drake School in which the Public School Art Society has been able to incorporate its ideals, although they have been executed by the board of education. The walls are covered with tinted burlap and hung with pictures; busts and other statuary are happily placed about the building, and the chalk boards are of a deep green color. The movable decorations of the building have been furnished by subscriptions secured from residents of their neighborhood, but the effect is largely dependent on the fundamental attractions of the building as provided by the board of education.

The Public School Art Society in St. Louis has been equally successful in its gradual education of the authorities. The Eugene Field and Sherman schools have been successfully decorated. The Sherman school includes a kindergarten room, admission to which is gained by double doors containing stained glass with silhouettes of Fröbel and Pestalozzi, and the room itself has not only tinted walls and good woodwork, but a charming frieze running all about the room, representative of children's pastimes.

The architecture of the school buildings must of course not only receive an artistic treatment, but also be in accordance with the laws of hygiene. Investigations have been made into the school buildings of many American cities in late years which, while revealing very serious imperfections, have also frequently led to great improvements.

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Dr. J. Howard Taylor, medical inspector of the board of health in Philadelphia, reported in 1895 that for seven years the defective grade in the boys' yard at a school building in the seventh ward had been reported, seven times the sectional board had been told that after a rain the water stood in the yard several inches deep, and yet at the time of that report no steps had been taken to correct this menace to health. At the same time in the course of a ten years' period of reconstruction, the water-closets in nearly all the old schools had been changed with great advantage to health.

Exhaustive investigations have been made into the school buildings of Boston, Washington, and some other cities, and Chicago is now engaged in some inquiries being carried on by its School Extension Committee and the Association of Collegiate Alumnæ. The United States Government has published the report of the Committee of Education of the Civic Centre and the Collegiate Alumnæ on the sanitary condition of the public schools in the District of Columbia. This committee visited personally eighty-three school buildings in Washington, and some of their inquiries may be quoted as being doubtless typical and certainly suggestive to any other community. The questions were modelled after those used three years before by the Boston Collegiate Alumnæ and consisted of two sets, one for the building as a whole, comprising one hundred and fifty questions as to site and surroundings, condition of building, basement, sani-

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taries, heat, ventilating, cleaning, and ten questions on health. The other set relates to each room in the building, treating of the cubic air space, light, temperature, ventilation, position of flues and blackboards, condition of room as to cleanliness, among other subjects.¹

In addition to the features of a good school building such as have been mentioned, including suitable architecture, interior decorations, the best sanitary arrangements, well-lighted rooms, tinted chalk boards, and assembly halls, may be added school furniture, not only artistic but practical; well-ventilated cloak rooms including, wherever possible, individual lockers, recreation rooms, gymnasiums, baths, lunch rooms, preferably in connection with the domestic science department, laboratories, library (the latter being most successful now when affiliated with the public library system), and playgrounds. The last should provide adequately for play without detracting from the æsthetic surroundings of the building.

A large number of American schools are now being equipped with baths; at least a score of buildings in Chicago have one or more bath-tubs in them. This is a primitive device, however, and the ideal is a swimming tank such as is found in many a British schoolhouse. The Western High School in Washington provides ample bathing

¹ A summary of this report and the questions to which answers are sought by the School Extension Committee in Chicago are given in Appendices IX and X.

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facilities in connection with its gymnasium. The most complete equipment is probably found in the Paul Revere schoolhouse in Boston. Two sets of shower baths are located in the basement, one for each sex. On the girls' side are ten individual compartments made of slate on three sides, with the entrance screened by a rubber curtain; the floor is of concrete covered with movable, slatted walks. The Gegenstrom heating system is in use, automatically regulating the temperature of the water, which is supervised by a matron. No individual accommodations are provided for the boys, the showers being so grouped that twelve pupils can bathe at the same time. Soap and towels are furnished free and the accommodations are adequate to give an opportunity to every pupil to bathe once a week throughout the school year, although this is not compulsory. Between 125 and 150 pupils bathe daily, the total cost to the school board amounting to about \$85 per month. Similar provisions are made in a building in South Boston now nearing completion.

As an indication of what may be done in a smaller city, the example of Moline, Illinois, may be quoted. There is at least one bath in each building in that city now. Sometimes, in the absence of baths in the school building, advantage is taken of neighboring public bath-houses, as, for example, in Brookline or Milwaukee.

Some cities have the wisdom and good fortune to surround their school buildings with ample,

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well-planted grounds. One of the most famous of these schools is the high school of Menomonie, Wisconsin, which owes its beautiful environment to Senator James H. Stout, of manual training fame. Almost every school building in the city of Winona, Minnesota, is located in the centre of a city block, the remainder of which furnishes natural surroundings. One of the schools of Mansfield, Ohio, has a turf playground of seven acres, partly wooded. In Andover, Massachusetts, there is a campus of nearly twenty acres, on which are accommodated the primary school, the grammar school, and the high school, having an attendance of six or seven hundred children, each building enjoying approximately a third of this area for playgrounds and gardens. The Massachusetts Horticultural Society inaugurated a garden in connection with the George Putnam School in Boston by the modest gift of ten dollars. A plot forty-eight by seventy-two feet back of the boys' playground is planted with wheat, rye, oats, barley, buckwheat, and some familiar vegetables. The irregularity of the topography in Davenport has led to the plan of terracing some of the school grounds, so that the playgrounds are surrounded by a border of green turf.

In Chicago, the Special Park Commission, which is now locating playgrounds in various parts of the city at the expense of the municipality, is endeavoring to place these in juxtaposition to schoolhouses. Sometimes the land adjoining the schoolhouse is

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taken, as in the case of the school at Twenty-fourth Street and Michigan Avenue. Sometimes a larger area may be secured across the street.

If the architecture of the schoolhouse, its decorations and surroundings, impress the child mind with the meaning of the beautiful, he will demand as a citizen a fairer city. The modern community is burdened with the responsibility of great possessions, and may enrich itself both materially and spiritually by building stately mansions. Nowhere can democracy come into its own with better inheritance than in making its cities worthy homes for its citizens. It has been said that in the past the strife of men led to their architectural efforts and achievements. To-day the ideals of commonwealth may make our public buildings attain the best possibilities in communal ownership and use.

CHAPTER VIII

PARKS AND BOULEVARDS

THERE are individual parks in or near foreign cities which rival those of the United States. There are historic parks within those cities, such as the Bois de Boulogne in Paris, the Thiergarten in Berlin, or Prince's Gardens in Edinburgh which are comparable to any in America. There are magnificent stretches like Epping Forest, near London, or the ducal surroundings of Karlsruhe, which we may scarcely rival, and an occasional city, London, for example, has made such advances in recent years as to have a distribution of parks with scarcely a peer on this side of the Atlantic; but the general extension of parks throughout the United States, the population per acre in many of the cities, and the facilities offered for popular patronage of the parks place American cities in the lead.¹

There is always the danger that we shall measure the value of the parks by their area and not by their adaptation to the necessities of the city.

¹ The cities of 50,000 or more inhabitants contain 2360 municipal parks and squares, valued at over \$530,000,000, requiring for annual construction and maintenance nearly \$10,000,000. Park Census for 1901, "American Park and Outdoor Art Association," Vol. V, Part I.

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The cities in this country or abroad having the largest park acreage are not always those best provided, as may be illustrated by a simple comparison. The number of persons per acre of open space in Paris is 495. If the two large parks, the Bois de Boulogne and the Bois de Vincennes, are excluded, the population is 985 to the acre. The number of persons in Manhattan to the acre of park space is nearly 1000, but if Central Park is eliminated the proportion rises to over 3000. The number of people in Philadelphia to each acre of park space is 320, but excluding Fairmount Park there are over 17,000.

The fallacy of the quantitative estimate is further emphasized by such facts as these. In Chicago 700,000 people live more than a mile from any large park. The most serious aspect of this is that those wards which are so deficient in park space are also those in which the houses are most crowded. The way in which one part of the city is favored at the expense of the other may be best indicated by observing that the eleven wards which contain the bulk of the park and boulevard system include 1814 acres of park space, the population being about 425,000; this means 234 people to each acre of park space. The remaining twenty-three wards of the city, with a population of over 1,000,000, contain 228 acres, or 4720 people to each acre of park space. This second division includes, of course, some sparsely settled districts, where the need for parks is not so great; if we

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were to compare, however, the eleven favored wards with eleven along the river, we should find the proportion even more startling. Similar conditions prevail in St. Louis, where the large parks are all on one side of the great railway system which bisects the city.

While a wise distribution of the park area is quite as important as the possession of a large amount, yet at the same time a certain standard of possible enjoyment is set by a multiplication of the acres of open space. The population per acre for the cities of one hundred thousand population or more in the United States is as follows:—

Los Angeles . . .	27.5	Philadelphia . . .	319.8
Washington . . .	77.5	Providence . . .	322.9
Kansas City . . .	92.0	Buffalo . . .	343.4
New Haven . . .	98.2	Pittsburg . . .	365.4
Columbus . . .	113.3	New Orleans . . .	371.5
Minneapolis . . .	130.5	Allegheny . . .	371.7
Indianapolis . . .	133.5	Syracuse . . .	435.2
Louisville . . .	149.4	Baltimore . . .	446.6
Toledo . . .	169.9	New York . . .	497.4
Omaha . . .	172.9	Cincinnati . . .	604.8
Boston . . .	214.2	Milwaukee . . .	655.8
Denver . . .	234.4	Newark . . .	692.3
Rochester . . .	248.4	Chicago . . .	789.4
San Francisco . .	250.0	Scranton . . .	1,049.9
St. Louis . . .	264.2	Paterson . . .	1,090.7
Detroit . . .	270.5	Fall River . . .	1,174.0
St. Paul . . .	272.9	St. Joseph . . .	3,614.0
Cleveland . . .	287.8	Memphis . . .	7,676.3
Worcester . . .	304.5	Jersey City . . .	11,466.25

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Even these figures do not tell the whole story. The chief parks of Los Angeles and Kansas City are outside the city boundaries. The park area of Minneapolis and St. Paul would be much more nearly equalized if their water surface was eliminated. According to the Bulletin of the Department of Labor, Minneapolis has 1581 acres of park space and St. Paul 600. According to the St. Paul *Pioneer Press*, St. Paul contains 800 acres and Minneapolis 1100, estimating the area of the latter on the same basis, that of the exclusion of lakes, as is adopted in St. Paul, although it must be conceded that the open space afforded by a water area is of prime importance. This estimate would give Minneapolis one acre of park space to 184 persons, and St. Paul one acre to 200 persons. Boston is placed eleventh in the list of American cities having 100,000 population, with 214 people to each acre of park space, but if Boston's metropolitan reservations were included, which is quite as legitimate as the basis of the estimate for Los Angeles, Boston has within the metropolitan district 16,000 or 17,000 acres, the largest area of any urban community in the country. Washington, which ranks near the top, has an admirable distribution of its park space, attaining this position by the inclusion of many federal acres. San Francisco has its beautiful Golden Gate Park, 1013 acres in extent and three miles in length, but this is quite overshadowed by the government reservation, the Presidio, which is more accessible to the

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city and gives equally magnificent views of the bay.

There are other cities of the country where the park system has been allowed to languish because of their being advantageously situated with reference to government property. Dayton, Ohio, is credited with but eight acres of park, and its newly constituted park board has confined itself largely to advising people how to grow vines on their back fences ; but the apology for this is that the Soldiers' Home in the suburbs furnishes a great recreation ground for the people. The city of Columbus is in a similar situation, having 196 acres owned by the city and 912 owned by the State. Many small cities, like South Bend, Indiana, and Tiffin, Ohio, rely on the pleasure ground provided by a traction company.

Special mention must be made of some cities which furnish evidence of unusual attention to the provision of parks, and of others equally notorious for their absence. Chicago has a smaller number of acres of park than New York, Philadelphia, St. Louis, Boston, Los Angeles, or Lynn. The Lynn Woods, comprising over two thousand acres of magnificent forest, give that city of 68,513 people an enviable reputation among the factory towns. Los Angeles has one park of over three thousand acres outside the city limits to add to its seven hundred acres within. New Haven has magnificent natural bluffs and hills, giving it a park acreage of eleven hundred. Tacoma, Washington, a

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city of thirty-seven thousand people, has nearly seven hundred acres of park, while at the other end of the scale Jersey City has twenty-two acres, Memphis thirteen, Hoboken nine, Nashville eight, and Camden four and a half.

Having noted the general distribution of parks in the United States, it is desirable to study the principles which should and do govern their development and use. The connecting link between the city and the park, as well as between the parks themselves, is the boulevard. A boulevard is a parklike street. It was originally a public walk or street occupying the site of demolished fortifications. According to the Century Dictionary, the name is now sometimes extended to "any street or walk encircling a town, and also to a street which is of especial width and given a parklike appearance by reserving spaces at the side or centre for shade trees, flowers, seats, and the like, and not used for heavy teaming." The boulevards are properly parts of the park system, although there are some cities in which the streets so nearly satisfy this definition of a boulevard as to give thus almost indefinite extension of park areas.

Such a city is Washington. The great diverging streets, radiating from the Capitol and White House, as well as from some other focal points, not only have this appearance of parkways, but as they meet furnish opportunity for delightful and formal bits of landscape gardening and the placing of

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statues and fountains. In fact these streets of Washington would be the characteristic streets of a normal city. The government authorities have control of the street from building line to building line, and not from curb to curb, as is the case in most cities. This plan is also followed in Louisville, and thus the opportunity is afforded for placing such restrictions on private owners as will conduce to a uniform development of lawns and foliage. The triangles and circles, of which there are 275 ranging in area from one acre down to 405 square feet, are a part of this admirable plan, and furnish, as has been said, the opportunity for those monuments so common to Washington, and also suggest an important principle which may here be emphasized.

The best landscape architects and sculptors are agreed that it is undesirable to locate statuary as a rule in natural parks, because of the inappropriateness of the surroundings and the greater need for such ornaments in the midst of the city. The rules recently formulated by the board of park commissioners in New York to regulate the acceptance and location of statuary in the parks of that city may be commended to other communities. They are as follows :—

“ No statue, bust, or memorial building shall be erected in any park where the scenery is of a predominating natural character, and statues shall only be placed as adjuncts to buildings, bridges, or viaducts.

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"Statues of great national, civic, or universal interest and of great artistic beauty may be placed in any of the small parks at the intersection of two or more avenues.

"No existing natural scenery, rock, woodland, drive, or lawn shall be destroyed or altered to accommodate any statue or memorial.

"No statuary, however satisfactory as a work of art, shall be accepted unless it will help to heighten the beauty of the landscape.

"Statuary and structures already in the parks, if not placed in conformity with these rules, may, if condemned by the art commission, be removed by the commissioners of the parks."

While other cities are not quite so favorably situated as Washington, a number of them have admirable boulevard systems, including New York, Boston, Chicago, Buffalo, Kansas City, Minneapolis, St. Paul, Pittsburg, and Savannah.¹

The metropolis of the country has not been able to keep its chief thoroughfare free from heavy traffic. While no rails are allowed to be laid on

¹ Many of the American cities have a famous street which accidentally possesses the characteristics of a boulevard, though it may not have an official place in such a system. Among the best known of these are: St. Charles Avenue, New Orleans; Broad Street, Columbus; Delaware Avenue, Buffalo; Euclid Avenue, Cleveland; the Lake Shore Drive, Chicago; Broad Street, Philadelphia; Clinton Street, Brooklyn; Eutaw Place, Baltimore; Woodward Avenue, Detroit; Summit Avenue, St. Paul; Lindell Boulevard, St. Louis; Government Street, Mobile; Bull Street, Savannah.

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Fifth Avenue, the encouragement of rapid transit on the other north and south arteries of the city has compelled the municipal authorities to yield to the demands of draymen and carters to continue to use it. It is questionable whether a narrow street, substantially paved, like Fifth Avenue in New York or Jackson Boulevard in Chicago, should be included in the boulevard system, but at least they provide access to the suburban districts and the parks. New York does possess in Riverside Drive and the new Speedway two unusual boulevards, not to mention the boulevards of Brooklyn. The magnificent views to be seen for three miles along the Hudson from Riverside Drive, the beautiful landscape gardening of the terraced bluffs, and the wonderful sites of Grant's tomb and Columbia University are widely known.

The Harlem River Speedway brings up the questions of economy and democracy. Here is a great driveway, over two miles in length, including its approach from 155th Street, the only public drive in Manhattan where there is no restriction on speed, built under great engineering difficulties, on account of the fall in Harlem River, on cribwork in the river, and cutting through precipitous rocky banks, which has cost over \$3,000,000. It naturally raises the question as to the propriety of a park department spending that amount of money for the benefit of a small and exclusive group. The same question has been raised in Chicago, where half a million dollars were spent in

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constructing a bicycle track in Garfield Park, which is now to be abandoned on account of the decline in the use of the wheel. As has been said in a former chapter, the provision of an adequate driveway to Fairmount Park in Philadelphia was opposed for many years because of the claim that it was aristocratic. When one considers the wealth of New York City and the great addition which the Speedway makes to the beauty of the Harlem River bank, or when one observes the beautiful boulevard which has supplanted the railway tracks on Pennsylvania Avenue in Philadelphia, one is inclined to think that circumstances alter cases, while one still doubts the expediency of such an expenditure as that mentioned in connection with Chicago.

Some of the most beautiful boulevards in the country are to be found in and about Boston, beginning with Commonwealth Avenue, which starts at the Public Gardens, runs through the Back Bay district, a spacious street 240 feet wide, with two driveways and a broad middle strip, where paths lined by benches wind under heavy shade trees. The treatment through the solidly built residence quarter is necessarily formal and geometrical, but as it approaches the suburban districts it follows the contour of the hills and becomes more and more natural. The driveways which radiate in all directions now from Boston, following the metropolitan reservations, furnish doubtless the most extensive boulevard system in the world.

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Provision is often made about Boston—a plan followed rather imperfectly in Minneapolis—for the laying of railway tracks in a turfed space in the middle of the boulevard, with a drive on either side, thus giving a chance to all kinds of tourists to see the beautiful country through which the boulevard runs.

Much has been said and written about the boulevards of Chicago. They have the merit of making now an almost complete system. Beginning at the Lake Front Park on the South Side, Michigan Boulevard runs to Garfield Boulevard, a continuation of Fifty-fifth Street, by which it connects with Washington Park. It also has a diverging connection at Thirty-third Street with Grand Boulevard, which again is united with Drexel Boulevard at Fortieth Street. Washington and Jackson parks on the South Side are connected by the Midway, made memorable by the World's Fair, now transformed into a broad stretch of green. Running west from Washington Park for several miles, and then turning north and passing by the new McKinley and Gage parks, the South Side boulevard system finally stops at the river, where the connection is lacking for a distance of about a mile with the West Park system, which unites the three parks of the West Side and then continues north and east, joining the North Side system. This, then, follows the lake shore until within less than a mile of the South Park system, making a nearly complete circle of forty miles. The two gaps which have

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been mentioned are the only interruptions to a complete encircling of an area which, when the system was projected, more than included the old city, but which is in all directions well within the Chicago of to-day. There are still other connections from the down-town district to the West Side system. This grouping of the parks and boulevards is really admirable, and looks upon paper as though it were the most notable accomplishment in the country. The fact is, however, that nearly one million people have virtually no means of avail-ing themselves of the privileges of this system. The great densely crowded population in the river districts is reached by only one of these boulevards, and that is the solidly asphalted Jackson Boulevard, at points which are two or three miles from any park. A more ambitious project is now in process of realization, namely, a boulevard from Chicago to Milwaukee, nearly ninety miles.

The city of Detroit has purchased property from Fort Street to the river, which will complete the boulevard system of that city by means of a horse-shoe plan from shore to shore. The boulevards of Buffalo are generally constructed on the plan which has been followed in Chicago and Boston, of giving them a width of about two hundred feet, so as to provide for two drives and several path-ways and sidewalks. In Buffalo the bicycle is still in constant use and nearly every boulevard has its bicycle path on either side. Toledo, which has one of the most complete and well-

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distributed park systems of any of the smaller cities, is also beginning a boulevard system which will follow the example of the cities already mentioned. The city of Savannah is unique in preserving a certain inner portion of the most delightful residence district free from the intrusion of the steam railways, and maintaining thus, in addition to one very important thoroughfare, others which have the nature of boulevards. Duluth's Boulevard Drive is one of the most beautiful roads in the country, following an old beach line of Lake Superior, at a height of four or five hundred feet above the present level of the lake. Charleston, South Carolina, takes pride in the Battery, an esplanade stretching for five hundred yards along the water front. Several southern cities have delightful shell roads along the sea-shore, Mobile revelling in one eight miles long. Portland, Maine, has two promenades, giving views of its beautiful water approaches.

The small parks, often of historical origin, bear the most intimate relation to the active city life. Mention has already been made of the curious geometrical plan of William Penn, for the city of Philadelphia, which included five small squares, determining the outline of the city, as he thought, all of which remain, except the central open square appropriated by the city buildings. Boston has set an illustrious example to its other New England neighbors, by preserving its famous Common of forty acres, reserved since 1634, the finest open

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space bordering on a business district, in America. Minor New England cities have their commons, but none to rival Boston's. The Green at New Haven is still a spot of comfort and peace between the business district and the college and residence sections. Southern cities frequently have a plaza corresponding on a smaller scale to the common, but they have often been as faithless to Spanish architectural tradition as New England has been to her heritage.

Strange to say, congested Manhattan has the most significant series of historical small parks of any city in the United States. Beginning with the Battery, which looks out upon New York Bay, at the point of division of the rivers, we find the Aquarium (taking the place of Castle Garden) and the great sea wall which forms the terminus of New York. Proceeding from the Battery to Broadway, we have scarcely left the one open space until we come to another, Bowling Green, sacred to the memory of the sportsmanlike Dutch founders of New Amsterdam, the buildings on the left side of the square marking the site of Fort Amsterdam. The railing around the circle dates from colonial days, when it used to inclose a statue of George III., torn down on the 4th of July, 1776, and melted into bullets. A little way beyond, the churchyard of Trinity gives the effect of an open space, and not much farther up Broadway we find City Hall Park. Before reaching Union Square at Fourteenth and Broadway, there is passed, a

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little to the left, at the beginning of Fifth Avenue, Washington Square,¹ which with the Washington arch makes a dignified entrance to the most luxurious thoroughfare of the world. Beyond Union Square but a short distance is Madison Square, at the junction of Twenty-third Street, Fifth Avenue, and Broadway, and another little historic square lies to the east, away from the main thoroughfares. Before reaching Central Park, there is still Bryant Park, at Sixth Avenue and Forty-second Street, adjoining the site of the new public library.

Including these historic spots, it may be appropriate here to mention that there are in the borough of Manhattan three large and forty small parks, in the boroughs of Brooklyn and Queens five large and thirty-five small parks, and in the borough of the Bronx four large and sixteen small parks.

In contrast with the first city of the land may be mentioned the second. Chicago has its lake front of limited area, at one time necessitating the crossing of the Illinois Central Railway tracks at grade to reach the lake shore, now connected by viaducts with the outer lake park, which is being made by filling in the lake for half a mile. This "improvement" has, however, necessitated the raising of a wall along the railway tracks and the grade of the inner lake front park, until the lake is no longer visible from Michigan Avenue, presenting a dole-

¹ Mr. C. R. Ashbee calls its quadrangle of colonial houses the most attractive architectural spot in America, *Munsey's Magazine*, October, 1901.

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ful contrast to the outlook from the Battery end of Broadway, in New York City. Chicago is trying to make amends for past neglect by developing a system of small parks throughout the city which will be comparable to its larger park and boulevard scheme. This, as well as similar improvements in New York, Boston, and elsewhere, will be discussed in the chapter on playgrounds. Savannah has twenty-three squares in the heart of the city at intervals of a few blocks, with which may be contrasted St. Louis, where the only two squares within five miles of the river have been surrendered to the exposition building and the city hall.

The great parks, which preserve the natural features, usually by virtue of being remote from the congested district, are of the utmost importance for rest and recreation, though they should not be allowed to conceal the city's need for smaller parks. Perhaps the most famous of the great parks is Fairmount Park in Philadelphia. For many years this park was the largest in the country and it still maintains its reputation in many parts for natural beauty, while it continues to grow and now contains twenty-eight hundred acres. Although it is located in the northwestern corner of Philadelphia, the modern trolley systems give it a very large patronage from the population of that city, and it has recently allowed a trolley line even to invade its groves and ravines.

This system of park transportation presents a

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critical problem. Fairmount Park is so extensive in area that it would require much leisure to do justice to its beauties or enjoy its possible benefits. There are thousands of people who make but one or two trips to the park in the course of a year. Ought they not to be allowed to see all that is possible on those brief visits? Yet this cannot be done without disfiguring the natural features. The great bridge across the Schuylkill, the cuts and fills throughout the park, unmistakably detract from the beauty of the landscape. If, as Superintendent Foster of the South Parks, Chicago, says, "Park roads are regrettable necessities," what shall be said of the inevitably ugly railway tracks? The question can best be decided apparently by inquiring as to the other facilities for recreation for the people. If the beauties of Wissahickon Creek, which runs for eleven miles through the northern part of Fairmount Park, can be preserved and extended so that the multitudes may still enjoy nature unadorned, perhaps the lower end of Fairmount Park, stretching for a distance of four miles along both banks of the Schuylkill River, may justly be devoted to more democratic, or at least more utilitarian purposes. It was in the western part of Fairmount Park that the Centennial Exposition was held; and after its disfigurements had been removed, Philadelphia enjoyed a great benefit in the subsequent improvements, and in the art gallery and horticultural building left there as monuments of the exposition.

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This suggests similar conditions which have prevailed in Jackson Park, Chicago, and will subsequently be found in Forest Park, St. Louis. Nine years after the close of the Columbian Exposition, Chicago is just completing the restoration of the southern end of Jackson Park, where it was held. When the work is done, however, the park will be immeasurably more beautiful than before. The Midway Plaisance, five hundred feet in width, stretching for a mile from Jackson to Washington Park, was laid waste for the benefit of the fakirs of the World's Fair, and a pleasant grove of scrub oaks was destroyed; but when the newly planted trees have attained their growth and the great boulevard is bordered by worthy buildings, the episode of 1893 may seem worth while. In Jackson Park the building given by Germany to the United States and now used as a refectory, the beautiful little temple,—a memento of the Japanese,—and the Convent of La Rabida, devoted now to a children's sanitarium, remain as tokens of the exposition; while the great series of lagoons about the Wooded Isle, which afforded one of the chief charms of the fair, form an equally pleasant addition to the attractions of the park.

In St. Louis the Louisiana Purchase Exposition has agreed to add a library to the magnificent group of buildings of Washington University now rising on the edge of Forest Park, as well as to make other contributions which will further en-

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hance the beauty of that famous park of 1370 acres, when the exposition is gone. St. Louis has also Tower Grove Park, a long, narrow park connected with which is the Missouri Botanical Gardens, which are probably only rivalled in this country by the Arnold Arboretum, adjoining Franklin Park, Boston.

New York City has entered upon a new era of park development which places it among the most progressive cities of the world. In the last decade there has probably been more and wiser park extension in London, New York, and Boston than in any other of the world's larger cities. Manhattan possesses the unusually accessible advantages of Central Park. That very considerable area of 840 acres, two and a half miles long by half a mile wide, which was laid out in 1858 by Messrs. Olmstead and Vaux and cost about \$15,000,000, is to-day most happily named, although the region of swamp and rock appropriated at that early date betokened to the unimaginative citizen mental deficiency on the part of the projectors.¹ The reservation of this great piece of land in the midst of the city has long since more than paid the initial cost through the taxation derived from increased valuation of

¹ Central Park is virtually divided into two portions by the Croton reservoirs, which occupy 143 acres, but there are still left 400 acres of groves, shrubbery, and meadows, and 43 acres of ponds. There are 10 miles of macadam drives, 6 miles of bridle paths, and 30 miles of foot-paths. Four depressed streets, Sixty-fifth, Seventy-ninth, Eighty-fifth, and Ninety-seventh, pass through the park without interference with the traffic within or without.

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property, to say nothing of the enormous unearned increment it has provided for the property holders. It is being surrounded by magnificent buildings, apartment houses, hotels, and private residences, and has on the east side the Metropolitan Museum of Art and on the west the rapidly multiplying structures of the American Museum of Natural History.

The other most widely known park of Greater New York is Prospect Park, in the southeastern part of Brooklyn, with many natural attractions and one of the most spacious and attractive approaches in this country. The streets leading to the park at its main entrance spread out about a circle, which is treated in monumental fashion, with a great triumphal arch; the disposition of the trolley service is most convenient and its disfigurement is reduced to a minimum.

New York has also three great parks north of the Harlem, which are still in a nearly natural state. Each one of these has some distinctive feature, natural or otherwise, to attract the public. There is a very good eighteen-hole golf course in Van Cortlandt Park; a zoölogical garden in Bronx Park, which is taking the place of the Zoölogical Garden at San Francisco as a rival to the National "Zoo" at Washington; and beautiful stretches of waterway in Pelham Bay Park.

One of the most famous parks in the country is Druid Hill Park of Baltimore, the attractions of which are due partly to the fact that it had been

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used as a private park for one hundred years, giving to it something of that coöperation between nature and man which was prescribed as a specific for securing the beautiful turf of the English college grounds,—that it should be rolled, cut, and watered for four hundred years.¹

A description of the park systems of Chicago and Boston will give the typical problems of American cities,—Boston having rare natural advantages, Chicago being dependent entirely on the landscape architect, except where Lake Michigan adds the beauty of a great water prospect. Chicago's boulevard system has already been described. It connects parks which are notable chiefly for the work of landscape gardening accomplished on forbidding topography.

In 1839 Dearborn Park was platted. This was the beginning of the establishment of parks in Chicago, and the only evidence of that first step now is to be seen in the use made of the ground by the Chicago Public Library, which entirely covers it. As the result of an inquiry made in 1869, Mr. John H. Rauch reported that New York had 943 acres of park space; Baltimore, 585; Brooklyn, 550; St. Louis, 386; Chicago, 126. On the basis

¹ Many other cities have their individual parks of distinction such as Schenley and Highland parks on the heights of Pittsburg; Charles Elliot's masterpiece, Keaney Park, Hartford, Connecticut; Belle Isle Park in the river at Detroit; Eden Park with its wonderful trees in Cincinnati; Golden Gate Park, San Francisco; East Rocks, New Haven; and the encircling systems of Buffalo, Louisville, Minneapolis, St. Paul, Indianapolis, Kansas City, and Toledo.

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of his investigations the first Chicago park system was devised, that for the South Side. The act was passed February 24, 1869, with a referendum, for issuing \$2,000,000 in bonds. At the election on March 23, the vote was 6216 for the parks, 3011 against. This method of referendum thus introduced still prevails, but forms no obstacle to the extension of park areas, as the legislators are commonly behind public opinion in this matter.

The park system of the South Side has been developed with wisdom, except for the omission of park space in the neighborhood of the river. It now includes two large and beautiful parks, in which unusually effective work has been done on the prairie foundation, and several smaller parks which are being given the character of playgrounds. Jackson Park is widely known as the site of the World's Fair, and has an interest chiefly because of the great extent of the lagoons which penetrate it from the lake, giving it at one point a water stretch of a mile, which will encourage boating as has not been possible on the treacherous lake. One of the most significant features of the South Park system is its government, there being absolutely no concessions to private enterprise, and the work on the parks from the initial steps of building to the policing of it is done under the direct supervision of the park commissioners, as will be described in the last chapter.

An instructive principle applied in the Chicago

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park system, for cities whose topography is equally unfavorable, is the diversity which has been introduced in the several parks. The three parks on the West Side are characterized by quite different features. The southernmost, Douglas Park, contains summer swimming provisions, and an open-air gymnasium and playground. Garfield Park possesses a great, and at one time very popular, bicycle track; while Humboldt Park, in the German quarter of the northwestern part of the city, is suggestive in many of its later developments of the Fatherland. The architecture of the park offices and stables is characteristically German, the refectory is as elaborate as would be necessary to appeal to these lovers of outdoor entertainment, there are several notable statues to distinguished Germans, and great attention is given to the cultivation of flowers. Lincoln Park on the North Side contains not only the Academy of Natural Sciences and Chicago's modest zoölogical garden, but also the chief sculptural decorations of the city, the best known being St. Gaudens's "Lincoln" at the entrance of the park, the most beautiful monument in Chicago, and the Grant Monument, overlooking the lake.

There is a different park commission for each side of the city, which in a measure prevents the proper extension of the parks to meet the growing necessities of Chicago, chiefly because of the unfortunately conspicuous part which politics play in the Lincoln Park and West Park boards. To

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correct this, Chicago has been given a Special Park Commission, with not very clearly defined functions, whose activities have been directed to the establishment of small parks and playgrounds and a comprehensive investigation of Chicago's needs. There are many beautiful natural tracts about the western metropolis which have been recommended for purchase by this commission, including Skokie marshes on the north, the Desplaines river region on the west, and the land bordering Calumet river and lake on the south. These large areas are located in districts more populous than those which surrounded the present park system when it was originally planned, although some portions of them are fifteen or twenty miles from the city hall.

The best park system in the world is that of Boston and its suburbs. The chief features of this comprehensive system are the Boston Common and Public Gardens, the seventy small parks and playgrounds scattered about Boston, the local parks of the several municipalities in the metropolitan district, and the metropolitan reservations, ranging thus, as will be seen, from central parks and local playgrounds to great rural preserves.

The first public suggestion for a metropolitan park system for Boston appeared in an article printed in the *Boston Herald* in January, 1891, in which a summary was given of the conditions of Boston and suburbs, based on the census of 1890. A plan was proposed to include a chain of parks

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from the already existing Lynn Woods around three-quarters of a circle to the Blue Hills on the south. According to the original statement, "under metropolitan management a chain of pleasure grounds might at a comparatively slight expense be laid out around the city to the northward and westward, forming a continuous communication from Lynn Beach around to a connection with the southern systems, the whole forming together with the present Boston parks one of the grandest park systems in the world."

The late Charles Eliot, who was secretary of the Trustees of Public Reservations, was so impressed with the idea, which he had privately recommended to Governor Russell in December, 1890, that he called a conference of the park commissioners of Boston and suburbs on December 16, 1891.¹ The consequence was the presentation and subsequent enactment of a bill by the legislature of 1892, providing for a metropolitan park commission to consider the problem of parks for this entire district. Mr. Charles Eliot was made landscape architect, and Mr. Sylvester Baxter secretary of the commission. The entire summer was spent in investigating the delightful surroundings of Boston, many of them unknown territory to the commission. The report which the commission presented in 1893 was so ambitious that even the authors of the plan scarcely hoped for its acceptance. Their expectation was that an

¹ Charles Eliot, Landscape Architect, Boston, 1902.

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educational campaign might gradually bring the people to an appreciation of this comprehensive scheme. Nevertheless, the unanimous support of the legislative committee to which the bill was referred, of Mayor Matthews of Boston, and of the press resulted in an immediate enactment of the bill. The Metropolitan Parks District was created, including eleven cities and twenty-five towns, a park commission was appointed, and the first loan of \$1,000,000 was authorized. Since then over \$10,000,000 have been expended, of which \$3,000,000 have been devoted to boulevards and parkways and the remainder to securing the over ten thousand acres in the reservations. One-half of this amount was secured from the several municipalities and one-half from the State.

The fact that within ten years so ambitious a project should have been not only carried out but amplified, is perhaps the most encouraging incident in American municipal progress in the last decade of the nineteenth century. The commission to execute these plans was appointed in 1895, and the work of the last seven years belongs almost in the realm of romance. The commission has acquired ten thousand acres of forest, sea-shore, and river bank, has not merely appropriated some of this area, but has developed much of it. Land has also been secured for seventeen miles of parkways, of which twelve have been constructed and are in use.

The forest reservations aggregate over seven

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thousand acres, and though they have been selected on the basis of intrinsic merit, by a happy accident they are so located as to make an equable distribution of park areas over the entire metropolitan district. The most important of these reservations is the Blue Hills, which includes the highest elevation of land in view of the Atlantic Ocean from Maine to Florida, covering an area, if we take in two lakes on the margin of the reservation, of more than five thousand acres, the largest tract devoted to recreation belonging to any municipality in the United States. This reservation lies due south of Boston from nine to eleven miles distant from the State-house. In a semicircle from this point, running to the Lynn Woods, near the sea on the north, is a continuous succession of river and forest reservations along the Neponset, Charles, and Mystic rivers, together with the local parks of Boston, Brookline, and Cambridge, and including the other great reservation of the metropolitan commission on the north, Middlesex Fells. Middlesex Fells contains over eighteen hundred acres of wild and rocky woodland, to which must be added eleven hundred acres held by the metropolitan water board and the local water boards of Winchester and Medford, which, for all practical purposes, also constitute a park area. The Lynn Woods, over two thousand acres in area, form another one of the local parks which must be included in the provision for the metropolitan district, because of its great beauty and extent,

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although, like Franklin Park in Boston, it is not included in the administration of the Metropolitan Park Commission.

The addition of five miles of sea-shore reservations on the east makes a nearly complete circle of parks and parkways about the metropolitan district. Of these beach reservations the foremost is Revere Beach, where the great bathing facilities are located, which will be described in the next chapter. A second important sea-shore reservation is Nantasket Beach, which was secured in consequence of the destructive November storm of 1898. There are also eighteen hundred acres in the river reservations, to which must be added the holdings of the local boards of Cambridge, Waltham, Newton, and Medford.

This great metropolitan system, then, includes forest reservations in the first place; in the second, the protection of five miles of sea-shore for the benefit of the public; in the third instance the preservation of the banks of nearly all the streams in the metropolitan district; and fourthly, a system of parkways and boulevards which will connect all of these different elements.

Following the example of Boston, other Massachusetts cities have undertaken to make amends for the neglect of the past by redeeming portions of their shore-line. There has been created for the accomplishment of this purpose a board of Trustees of Public Reservations, which has reported on the condition of every city and village on the sea-shore,

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has indicated what they have already done to preserve their public holdings, and what ought to and can now be done. They point out the contrast between Lynn with its magnificent woods, and other considerable towns, such as Gloucester, which have nothing. Nearly every one of these cities owns some little spot from which the sea can be enjoyed, sometimes including a portion of the shore, but for the most part they have allowed the old commons and other public lands to slip out of their hands.

The historic town of Salem possesses a common of nine acres in the heart of the city, and a thirty-acre tract on the shore, known as the Willows, one of the most valuable of all the public holdings along the New England sea-coast. The concessions to restaurants reduce the cost to the city of maintaining this pleasure ground to four hundred dollars a year. Quincy has seventy-five acres in Merrymount Park on the sea-shore, a gift to the city by Charles Francis Adams. Next to Lynn Woods perhaps the most important of the sea-shore reservations is Martin Park at Plymouth, one hundred and fifty acres of beautiful forest along the shores of Billington Sea.

Of the forty-six Massachusetts towns on the sea-shore, the Trustees of Public Reservations have found only eight which can be said to be fairly well equipped with parks and commons. The great lands or commons which were once almost universal have nearly all been sold to individuals,

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except in the island of Nantucket, where there are still one thousand acres of undivided common. It is worth mentioning that the preservation of Lynn Woods by the park and water boards is in reality a restoration to public ownership of two thousand acres of woodland which was once a common.

The inland cities of Massachusetts are rapidly making the same advance in the acquisition of park space which they have done in the establishment of libraries; only three considerable cities are now lacking public recreation grounds. The accomplishments of the cities are also being rivalled by the rural districts. The Trustees of Public Reservations have not confined themselves to the sea-shore, but have done splendid work in preserving many of the most beautiful spots in Massachusetts, some of them of considerable area. Their example has been as beneficial as their direct activities, and to this is due the acquisition by the State of Graylock Mountain in the Berkshire Range and of Mt. Wachusett in the centre of the State.

The same results have been achieved in Essex County, New Jersey, where the populous suburbs of New York are being connected by a wonderful series of natural parkways, which will include Newark, the Oranges, Montclair, and the other towns of the county. The commission appointed by the governor was approved by a referendum, as was a bond issue of \$2,500,000. Since then another million and a half have been added, and

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one of the greatest rural park systems in the world is now in process of development, including mountain and valley and natural waterways, connected by a splendid system of drives.

The rapidity with which parks may be developed by backward cities is illustrated by Indianapolis, Louisville, Kansas City, and New Orleans. Indianapolis in the course of three years added three large parks having a total acreage of 1250 acres, including nearly one thousand in one area, and eight small parks, ranging from three to twenty-four acres in extent. To this extensive park provision is to be added also a boulevard system, of which two miles have already been constructed. The chief park is situated on the White River, stretching for two and a half miles on both sides of the stream. Similar extensions have been made recently in Louisville and in Kansas City, although not with such rapidity. From being one of the inadequately provided cities, Kansas City has within a few years added so much park space as to enable it to rank third among the cities having over one hundred thousand population. In both cities attractive natural parks have been established partly outside the city limits. New Orleans has been engaged for some time in subduing a rather neglected and unattractive tract along the levee, which is now assuming such beauty as is possible in that semi-tropical climate. The enormous area of New Orleans, covering as it does more ground than any city except New York,

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including a considerable water area, makes possible a great system of parks, when the aggressive park commissioners have won public support for their project.

The transition from parks to recreation is best made perhaps by a consideration of the recreative opportunities furnished in these great municipal pleasure grounds. In nearly all of the large parks of the country provision is now made for picnic parties and other pleasure seekers by the establishment of restaurants, the furnishing of boats on waterways or carriages along the driveways, or sometimes by the equipment of playgrounds with swings and other apparatus. These facilities are too often left in the hands of concessionnaires, who pay a small sum to the park, with such limited restrictions that they are able to make high charges for poor provisions. In the South Parks of Chicago, and some others, all these means of enhancing the value of the parks are retained by the park commissioners in their own hands, to the economy and added enjoyment of the public.

Nearly all the large parks make special arrangements for encouraging athletic sports by baseball, football, and cricket grounds, tennis courts, and bicycle tracks. Nothing could indicate better the progressive spirit of many of the park boards than the multiplication of public golf courses. The response was almost immediate in the case of the demand for tennis, but this requires the use of little ground, and commonly the improvement of it

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was of the most meagre character, so that it has meant much more of a permanent investment to provide golf courses. Nevertheless, the public links in Van Cortlandt Park, New York, Franklin Park, Boston, and Ottawa Park, Toledo, are quite comparable to the best courses of private clubs. Sometimes, as in Schenley Park, Pittsburg, a private club is given special privileges on the golf course. In other cases, as at one time at Franklin Park, Boston, a fee is charged for the use of the course. But the American prejudice in favor of providing the services of the park free has resulted in making most of the public golf courses absolutely free to the public, although the present demand is such that some form of regulation by fee or otherwise is at times necessary. The little nine-hole golf course in Jackson Park, Chicago, has been patronized by eight hundred persons in one day, whereas in a national tournament it is found difficult on an eighteen-hole course to get off one hundred players twice in one day.

One of the most interesting developments of public recreation through the agency of the park commission is found in Toledo, Ohio, where a sleigh-ride is given in the winter to each school child, groups of twenty or thirty being taken over the parks and driveways of the city by the park commissioners. Toledo has also gone a step beyond other cities in the furnishing of music to the people. A movable band stand is carried not only from one park and public square to another,

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but even to the little triangles where the streets converge in populous quarters, where music by the public band is given on summer evenings. Nearly all the cities which have adequate park provisions furnish music in the summer time, usually twice a week,—on some week-day evening, and Saturday afternoon, as in Chicago, sometimes on Sunday, as in New York and Davenport. In Pittsburg the public organist plays in Carnegie Music Hall, on the edge of Schenley Park, Saturday evenings and Sunday afternoons.

There yet remains for the park commissioners of most of our cities the problem of popularizing the parks. Unless the parks are very favorably situated they are deserted on bleak and threatening days, and it too often happens that thousands of the people never visit them even once in the course of a year. It is probably true that the highest success will be achieved only when the three most valuable principles of the successful library are applied *mutatis mutandum* to the parks,—open shelves, children's rooms, and branches; which may be translated into, Free access to all parts of the park, special recreative provision for children, and the location of the parks where they are wanted. Such an appreciation as is now shown for the public libraries we shall then see for these great breathing spots and pleasure grounds.

Professor Geddes has picturesquely pointed out that according to scripture tradition and prophecy, life began in a garden and is to end in a heavenly

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city. For our municipality of the future these ideals might be united and realized, and we should be paving our way toward such a result by gracing our cities with the needed parks and parklike streets.

CHAPTER IX

PUBLIC RECREATION

PUBLIC provisions for recreation are much more limited in this country than abroad. While it is quite common to have public concerts in the parks of the United States, and municipal concerts were given in the winter under Mayor Quincy's administration in Boston, the city or State theatre or opera-house, or the *Stadtgarten* of Germany is almost unknown in this country. One city, at least (Marietta, Ohio), owns a theatre. The chief public recreative institutions in American cities are playgrounds, public baths and gymnasiums, recreation piers, and various forms of entertainment in the public parks. Most of these public institutions are the result of the enlargement of civic life during the last ten years, and the chief examples of them are found in a very small number of the cities of the country.

Children's playgrounds are as necessary as schools to the welfare of the modern community. The idea that the public interest in the child ceases at the close of the school session has to be abandoned in the contemporary city. Along with the restricted opportunity for play in the city streets there has

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come a conception of the value of rational recreation which has its application in both city and country. Regularly equipped playgrounds with apparatus and the direction of skilled teachers or attendants, to encourage both individual and organized play, will soon doubtless be a part of the public-school system throughout the land. In the populous quarters of the cities, the playgrounds may take the form of open spaces in the midst of crowded tenements, of school yards, or, as a device of despair in New York, space on the roofs of school buildings. The experiences of New York and Boston are more instructive than those of any of the other cities of the country, because New York's tenement districts have furnished the most difficult problem, and Boston's civic spirit has provided the best solution.

According to the Tenement House Committee of 1894: "While New York, including the thinly populated annexed districts, ranks sixth among cities, New York below the Harlem has a greater density per acre than any other city in the world, namely, 145.2 per acre. Paris comes next with a density of 125.2 per acre, and Berlin follows with 113.6. . . . Sanitary district A of the eleventh ward contained, June 1, 1894, as many as 986.4 persons to every one of its thirty-two acres. It may be that these figures are equalled in some parts of the world, but the only information at hand indicates but one district approaching this—a part of Bombay, which had in 1881 a population

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of 759.66 to the acre, in an area of 45.06 acres. . . . The densest small section of Europe seems to be the Josefstadt, of Prague, with its 485.4 to the acre, but New York's tenth ward exceeds this with not less than 626.26 to the acre, and the tenth ward has nearly five times the acreage of the crowded district of Prague."

The realization of the needs of the tenement district dates back to 1857, when a legislative committee inquired into the condition of the New York slums. They revealed the fact that the evils of New York's overcrowded East Side were not due to the original sin of the inhabitants, but to such congestion as has been indicated above. It was not until 1879, however, that public-spirited people undertook to do something about correcting these evils. The churches became interested, a citizen's committee was appointed, and out of that agitation grew the Tenement House Commission of 1884. Model tenements were erected, sanitary regulations were introduced, occasional death-traps were destroyed, but it was not until the next decade that the idea took root that tenements might be torn down not to make way for other tenements, even though these might be "models," but for playgrounds. Mr. Jacob Riis has told the story often of the destruction of Mulberry Bend, in which his experienced hand as police reporter and friend of the children was conspicuous. The Tenement House Commission of 1884, as he says, "had rather timidly suggested

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that a street be cut through it to let light and air into the bad block." Three years more were required to reach the decision that the entire three acres should be wiped out. In 1887 an act was passed which authorized New York to spend \$1,000,000 a year for the establishment of small parks, and Mayor Hewitt, who was the author, said, "The playground was assumed to be an essential part of the park." This act would have made the creation of Mulberry Bend Park easy, had it not been for official delay. Mr. Riis dogged the steps of the officials until he secured the admission from one of them in the city hall that "no one down there had been taking any interest in the thing." This gave him his text for the newspapers, and the outcry which was raised resulted in the first steps being taken to get rid of the tenements. Two years were required to get a map of the proposed park filed under the law, six years more were occupied in condemning forty-one pieces of property. The cost to the city in the original estimate was \$1,000,000, and an assessment of half a million was laid on the surrounding property because of the unquestioned benefits to be derived from opening so much space and making it attractive. The legal talent employed by the landlords, however, was able to persuade the courts that the park was an injury and an extra burden of half a million was laid upon the city. Finally, with all the houses down and the space open to the sunlight, another year was required

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before its transformation into a park began. According to the law of 1887, allowing \$1,000,000 a year for park purposes, \$8,000,000 might have been spent, but when the final action came to be taken on Mulberry Bend Park a special law and appropriation were necessary because the amount needed was more than \$1,000,000 in one year. This tedious story happily belongs to the annals of the past, and although it was repeated in the case of Seward Park in the Ghetto, the movement is well under way now, and there is a prospect that the full annual appropriation will be regularly used to the immense improvement of New York.

The establishment of Mulberry Bend Park was, however, only the first step, as it remained a park with inclosed lawns, on which even the famous fighter who more than any one else secured this boon for the children, was not allowed to tread without the forbidding command of the police reminding him of the ubiquitous sign, "Keep off the grass." In addition to the extensive grass plats, there are broad concrete walks, and in one end a shelter, but no space, except such as a widened street affords, for the children to play.

The second of New York's clearances, in the Hester Street region, introduced the modern playground to the metropolis, although even in this case the actual provision of facilities for play was made by the Outdoor Recreation League. During the period in which \$14,000,000 were available for playground purposes, not one dollar was used to

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provide apparatus for children's play, and twice was the league compelled to fight the action of the park commission in agreeing upon plans which would have made a park of the space and ignored the children. The heroic struggles of Mr. Charles B. Stover belong in the annals with the achievements of Jacob Riis, in defending the interests of the children. An act of 1895 provided "for at least two parks on the lower East Side to be finished in part as public playgrounds." By the terms of this act; as well as on the grounds of common-sense and the public need, these parks were "to be laid out within three years after the passage of said act." The tenements in this Jewish district were finally removed in 1898, but another year of inactivity saw the advent of spring in 1899 before permission was given to the Outdoor Recreation League to equip the space as a playground and open-air gymnasium. From that day to this, summer and winter, from morning till late evening, the League has maintained this playground, remaining faithful to its task mainly in order to educate the people to the point where they will insist that sandpiles and swings are as desirable for that community as lawns and shrubberies. There is happily space enough to provide both of these *desiderata* in this populous region, and the park department has now been trained by these friends of the people, so that the \$500,000 granted by the Low administration for the completion of Seward Park as a place of recreation

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for young and old will be well spent. The Outdoor Recreation League has introduced other elements which are suggestive of the educational possibilities of recreation. Facilities are offered for the entertainment of all ages, including the sheltered resting places for the old ; the apparatus is adapted to different ages, strength, sizes, and sexes ; there are sandbins for the children ; and there are good collections of domestic animals, common vegetables, and cereals.

New York is now better provided with playgrounds than any other city in the country except Boston. The Outdoor Recreation League conducts several of these places of recreation, a number of other philanthropic bodies do the same, and the city has an extensive system of playgrounds in connection with its play-schools in the public school yards.

While there is no other city which has spent \$3,000,000 for two playgrounds, nor any other which has a generous appropriation of \$1,000,000 a year for such purposes, Boston is the pioneer in the establishment of children's playgrounds, and the thirty years of the movement there have witnessed a progress which is beyond that of the other American cities. The suburb of Brookline actually inaugurated the first public playground in America by town vote in 1872. Fifteen years later, Dr. Marie Jakrzeska wrote to the chairman of the executive committee of the Massachusetts Emergency and Hygiene Association, telling of the

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provisions made in Berlin for little children, and asking if that could not be done in Boston. As a first result of this petition, three piles of sand were placed in the yards of the Children's Mission and two small chapels. The following year ten localities were equipped with sandpiles, one in the yard of the Wait School House, in which a vacation school was being conducted. This led to the general use of the school yards for purposes of play during the summer, Boston at that time following the practice which is still well-nigh universal in American cities of closing the yards after school hours. Several yards were equipped with sand, toys, and light apparatus, and opened four half days each week under the supervision of matrons.

There has now developed an extensive system of equipping the school yards and using them for children of all ages under the control of skilled attendants, always including at least one kindergartner. In 1890 the value of these aids to play was so far appreciated that a winter playroom was opened, where both afternoon and evening the children met to play games, to sew, or to read, or even merely to enjoy the warmth of the room. This movement grew in strength and influence until the establishment of the municipal open-air gymnasiums, on the Charlesbank in 1892, and at Wood Island in 1895. The former, on the edge of the crowded North End, is probably the most successful playground in the United States, in its location and use, though the patronage is naturally

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not so great as that at Seward Park, New York. In 1898 Josiah Quincy secured legislation giving Boston \$200,000 a year up to a total of \$500,000 for "a comprehensive system of playgrounds." Under this law ten playgrounds have been established.

In Philadelphia the City Open Parks Association opened a playground in 1894. In 1895 the board of education granted the use of four school yards. Councils appropriated \$1000 for their maintenance and put them under the charge of the city director of kindergartens. The next year twenty-seven such playgrounds were opened. The Culture Extension League was organized in Philadelphia, and after many discouragements succeeded in temporarily establishing a model playground at a cost of \$12,000. It contained shelters for boys and girls, with shower baths. It included in its equipment a running track, swings, sandbins, and was supervised by paid assistants. It can scarcely be said, however, to have succeeded in its purpose of being the model playground, as those of Seward Park in New York, and Charlesbank in Boston are vastly superior. This organization, however, largely inspired by Mr. S. V. Tsanoff, has probably been more responsible for the extension of the playground movement into many of the cities of the country than any other single force.

The first school playground in Chicago was maintained in the Washington School yard in 1897

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by the West End district of the Associated Charities, which had been preceded by the use of several vacant lots on Polk Street by Hull House, in 1893, and the establishment of a large and well-equipped playground by the Northwestern University Settlement in 1896. These three Chicago playgrounds have performed their work of education so well that although the last named had to be abandoned because of the extension of the tracks of the Northwestern Railway Company, the school-yard playgrounds have now grown in number as had been hoped, and a system of municipal playgrounds has recently been established. In 1895 the West Park commissioners opened a complete outdoor gymnasium and running track in Douglas Park, to which were added subsequently open-air swimming tanks. This playground, which has been well equipped, is remote from the centre of population, and has not been well patronized. A similar playground has also been established by the South Park Commission. In 1898 the city council appropriated \$1000 toward a fund for conducting six playgrounds in the school yards, the remainder of the sum needed being secured through private subscriptions by the Vacation School and Playground committee of the Women's Clubs of Chicago.

The needs of the city are being met better now by the activities of the Special Park Commission, which was created on June 12, 1899. The commission consists of eight aldermen, representatives

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of the three park boards of the city, and nine citizens. It has had two functions, one to make a comprehensive plan for the extension of parks in and about Chicago, and especially to locate small parks in the crowded districts, and secondly, to conduct playgrounds. In the pursuance of its policy to distribute small parks throughout the city, the commission has secured from the legislature authority for the several park boards to issue bonds to the amount of \$2,500,000.

An annual appropriation of \$10,000 enables the commission to carry on, somewhat imperfectly, its playground work. Five pieces of ground belonging to the city or leased at a nominal price have already been equipped with shelters, sandpiles, and apparatus, in one case the space being ample also for a ball field. These playgrounds are in charge of attendants under the civil-service regulations, who keep the grounds open from nine in the morning until nine in the evening. The establishment of these municipal playgrounds has led to the abandonment of those conducted by the Committee of the Women's Clubs in connection with their vacation-school organization, but this is not significant since the playgrounds have been municipalized in Chicago, and will doubtless be extended every year.¹

One minor feature of the Chicago playgrounds may be recommended to all similar institutions

¹ Municipal playgrounds are also found in Buffalo, Louisville, San Francisco, Cleveland, and Toledo.

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elsewhere. The shelters and fences were designed by a committee from the Chicago Architectural League. They are simple and graceful in outline, and painted in appropriate shades of green and red. The provision of separate toilet rooms for boys and girls and the ample supply of drinking water are also worthy of mention.

In Pittsburg and Allegheny fourteen playgrounds were kept open last year by the joint committee of the Women's Clubs of Pittsburg and vicinity. They have secured the use of a number of school yards and have a small appropriation from councils, but have not yet persuaded the authorities as to the necessity of municipal playgrounds.¹

One of the most significant features of the Chicago playgrounds is the practice of flooding them in the winter, which has also been done in New York, Boston, Toledo, and elsewhere. The provision of skating rinks has, however, been carried farther in Chicago than in any other city, as it is not confined to the playgrounds. By the coöperation of the commissioner of public works, the city electrician, and the chief of the fire department, the use of vacant lots is secured, the city lights them by electricity, and the fire department floods them. No fewer than two hundred such skating rinks were opened by the city last winter.

¹ Similar methods have been followed in Providence, Baltimore, St. Paul, Minneapolis, St. Louis, and other cities. Both municipal and philanthropic playgrounds are found in Louisville.

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Legislative steps have been taken by New York which put it in the van in the provision of two forms of popular recreation. Every schoolhouse which is built in New York now must be provided with a playground. In the congested district this is accomplished sometimes by locating the playground on the roof of the building, but in all outlying parts of the city ample space about the building is being included in the plans.

New York State has also recently taken the most advanced step in the subject next to be discussed by passing a law which makes the provision of public baths obligatory upon the cities. The statute reads: "Section 1. All cities of the first and second class SHALL establish and maintain such number of public baths as the local board of health may determine to be necessary; each bath shall be kept open not less than fourteen hours each day, and both cold and hot water shall be provided. The erection of river or ocean baths will not be deemed in compliance with the requirements of this section. Any city, village, or town having less than fifty thousand inhabitants *may* establish and maintain free public baths, and any city, village, or town *may* loan its credit or *may* appropriate of its funds for the purpose of establishing free public baths."

Public baths are a popular means of recreation and an indispensable protection of the public health, which would have been appreciated long

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ago had it not been for the American illusion that all houses are provided with private baths. When the Tenement House committee of 1894 in New York reported that out of 255,000 inhabitants of the tenements which it inspected only 306 had access to bath-tubs in the houses in which they lived, a revelation came to the workers among the poor and the authorities in many cities. Dr. Hartwell says:—

“ It is frequently said that houses in American cities are so generally furnished with bath-rooms that the need of public facilities for bathing does not exist at all comparable with the need for better bathing facilities in European cities. It is interesting to know that in 1887 Dr. Rohe, of Baltimore, Maryland, in an address delivered before the American Medical Association in Chicago, showed that, contrary to the popular belief, a large proportion of the inhabitants of the American cities were unprovided with adequate bathing facilities. His statistics concerning eighteen cities having no free public baths, among which were Baltimore, Maryland; Cambridge, Massachusetts; Cincinnati, Ohio; Milwaukee, Wisconsin; Minneapolis, Minnesota; Portland, Maine; and St. Louis, Missouri, showed that only about twenty-five per cent of residences were supplied with bath-tubs. He concluded that five-sixths of the inhabitants of these cities have no facilities for bathing, except such as are offered by pail and sponge, or a river, lake, or other body of water which may be easily

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accessible, but in winter even such sources of cleanliness are cut off.”¹

An investigation made in Grand Rapids, Michigan, a city with a good reputation for cleanliness, brought to light the fact that only five per cent of the population had the use of private bath-rooms.

A pamphlet published by a Davenport editor presents similar facts.² “The exact number of buildings in Davenport is not material, but the board of health gives it as 7033; the number of families 7157. The number of houses taking water is 3574—one-half the dwellings without the public water supply, and consequently without any but the most primitive bathing facilities. The total number of bath-tubs registered is but 1133, and the total number using these bath-tubs, estimated very carefully, is 5655—or less than 16 per cent of the population.”

The fuller knowledge of these conditions has led not only to the introduction of bathing provisions in the summer time for the population of cities located on waterways, but also for the establishment of what is now regarded as the standard public bath, a building in which opportunities for bathing are furnished all the year, usually free. The Massachusetts Sanitary Commission of 1850 recommended the establishment of public baths and wash-houses, but the first encouragement of public bathing probably came from the very nega-

¹ Hartwell, “Public Baths in Europe.”

² B. F. Tillinghast, “Free Public Baths for Davenport,” 1901.

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tive act of the authorities in Boston repealing the statute forbidding bathing in the bay in 1860. A positive encouragement was given by the establishment of ten summer bathing places in 1866.

The first all-the-year public bath which provided swimming tank and showers, was the West Side Natatorium in Milwaukee, erected in 1889, at a cost of over \$21,000. A second public bath-house, the South Side Natatorium, was built five years later (1894) at a cost of approximately \$25,000.¹ Both of these public baths antedate any similar institution elsewhere in the country, as the next to be established was at Brookline, Massachusetts, 1895. The most attractive public bath-house in the country is doubtless that erected at Brookline, which cost \$43,000, a large sum for a community of that size, and less than was spent for the Dover Street bath-house in Boston, the next most pretentious one, although it includes only shower baths and tubs. The swimming provisions at Brookline are exceptionally good, taking rank with the best private natatoriums of the country. There is also unusual encouragement given to school children to make use of these bath-houses, not only by a reduction of the fees, but also by the offering of prizes for skill in swimming.

A comparison of the patronage and cost of maintenance of the bath-houses of Milwaukee and Brookline may throw some light on the advisabil-

¹ The rules for the government of these public natatoriums will be found in Appendix XI.

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ity of maintaining free public baths. In 1900, 215,000 baths were furnished at the West Side Natatorium in Milwaukee at a cost to the city of \$4755, or including interest on the plant, \$5595; at the South Side Natatorium there were 212,000 baths taken, costing the city, including interest, \$5270, in each case an expense of about 2½ cents a bather. In the same year it cost the city of Brookline \$7600 to provide 50,000 baths, and there was received in fees the amount of \$5233.50, leaving a deficit of \$2366.50, thus making a cost to the city of nearly five cents a bather. It would appear that it costs the city only half as much per bather in Milwaukee to provide free baths, as it does in Brookline to provide baths for fees.

The city of Chicago was the first city to open all-the-year bath-houses for the provision of shower baths alone (including, however, a few tubs). The Carter Harrison bath was opened in 1893. This was followed by the Douglas Park Open-air Natatorium in 1896, and then in successive years by three other all-the-year bath-houses. The expense to the city for the provision of free baths in these public bath-houses is between three and four cents for each of the half million bathers. Summer bathing in Chicago's twenty miles of lake front has been discouraged until recently, when the authorities at Lincoln Park began to wink at the practice. The first public bathing beach in the residence districts was opened as a result of a private benefaction in the summer of 1901 and

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a fully equipped public bath-house was opened in Lincoln Park in July, 1902.

Other cities which have all-the-year public bath-houses are Yonkers (1894), Rochester, Newark (New Jersey), Buffalo, Albany, Baltimore, New York, and Louisville (1902). The three new bath-houses in Baltimore are the gift of Mr. Henry Walters to the city. In the other cities they have been built by the municipality. In a number of cities bath-houses are supported by public philanthropy, as in Philadelphia or Pittsburg. The Sutro Baths of San Francisco are widely known and are a great boon to that city, but they are managed on a commercial basis. James Lick left \$150,000 to provide free baths in San Francisco, but a fee of ten cents is charged in these. Hot Springs, Arkansas, furnishes the example of federal provision of such facilities.

The summer bath-house at Belle Isle Park, Detroit, is commodious and has a most charming location. The public bath at St. Paul which has now been open two years was the gift of Dr. Ohage, the health officer, and is beautifully situated on an island in the river, which has been transformed into a park, making the surroundings unusually attractive. New York, which established free floating baths in 1878, had eleven in 1901, in which free instruction in swimming was given; two directors and forty-four teachers devoted their time to this instruction. In 1899 five million baths were taken.

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The amount of money appropriated by various cities, up to January, 1901, for the provision of bath-houses, bathing pools, and beaches, will give some idea, when seen in connection with their population, of the attention thus far given to such necessities throughout the country:¹

		POPULATION
New York	\$ 275,700	3,437,202
Chicago	47,663	1,698,575
Philadelphia	96,000	1,293,697
Boston	104,000	560,892
Baltimore	25,000	508,957
Cleveland	4,000	381,768
Buffalo	3,870	352,387
Detroit	16,180	285,704
Milwaukee	69,778	285,315
Washington	500	278,718
Newark, N.J.	25,000	246,070
Rochester, N.Y.	16,000	162,608
Worcester, Mass.	6,000	118,421
Syracuse	12,445	108,374
Albany	6,500	94,151
Cambridge, Mass.	1,500	91,886
Hartford	7,858	79,850
Wilmington, Del.	(in parks)	76,508
Lawrence, Mass.	1,500	67,559
New Bedford	1,600	62,442
Des Moines	1,200	62,139
Springfield, Mass.	2,000	62,059

¹ Bulletin of the Department of Labor, Washington, September, 1901.

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		POPULATION
Hoboken	\$10,000	59,364
Utica	1,000	56,383
Salt Lake City	50,000?	53,531
Yonkers	32,315	47,931
Holyoke	1,275	45,712
Taunton	1,500	31,036

The most extensive system of baths in the United States is to be found in Boston. The Dover Street bath-house, in one of the crowded quarters of Boston, cost about \$70,000, and includes an excellent and extensive system of shower baths with a few tubs. This is the only all-the-year bath which Boston possesses, but there is a most comprehensive system of summer bathing places. The many waterways of Boston give abundant opportunity for the location of summer bath-houses, and the patronage of these as shown in the municipal reports would indicate not only the choice of some of the most desirable and popular bathing beaches, but a very wise location of the minor bath-houses with reference to the distribution of population. In 1900 there were 2,537,029 patrons of the Boston municipal baths.

No less important is the effort made to give instruction in swimming. The number of men, boys, women, and girls taught swimming in Boston seems quite amazing, even when compared with the total number of bathers in the public baths of many

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other cities. In one fortnight in 1899 a total of 165,083 persons were given swimming instruction, including 29,374 men, 107,677 boys, 5,641 women, and 22,391 girls. To appreciate the elaborate provisions of Boston, one must be reminded that they include the Dover Street bath-house, undoubtedly only the first of similar institutions to be scattered throughout the city, the various more or less modest bathing establishments at convenient points along the waterways, and the sea-bathing beaches, culminating in the popular Revere Beach, with its magnificent appointments.

One of the small baths is that at L Street, said by Sylvester Baxter to be the first free municipal bath of any kind established in the United States and to be still the most popular. The conformation of the shore makes a secluded bay, in which thousands of men and boys are permitted to bathe in absolute nudity throughout the summer. A recent improvement divides the beach into three sections by high fences, so that women and girls, as well as men and boys, may take advantage of that popular resort. The most unique feature, however, of this entire scheme of baths is the great seaside recreation project at Revere Beach. This had been a popular resort before it was put in charge of the municipality, but the beautiful stretch of three miles of crescent beach has been quite transformed since the municipality removed the wretched structures along the shore, set the railway back, and at a cost of over \$1,000,000,

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made a beautiful and popular seaside pleasure ground. There are several hundred thousand visitors in a single week sometimes, and no resort on the Atlantic coast presents a more attractive appearance on hot summer days, as certainly none is so thoroughly democratic.

A new and simple device for furnishing public amusement is found in the recreation piers of New York and Philadelphia. One of the regular docks has added to it a second story without interference with the shipping on the lower floor, and a large space is thus secured stretching out over the water, where on sultry summer evenings there is access to such refreshing breeze as may exist. These recreation piers are found on both the North and East rivers of New York, and at the foot of Chestnut and Race streets, Philadelphia. The nearest approach to this admirable substitute for a recreation ground to be found in other cities, is in the Lincoln Park and Jackson Park sanitariums in Chicago. Here is provided on the lake shore, where the breeze is rarely lacking, a place of rest and entertainment, especially for little children and their mothers. While these institutions are located in the public parks, they are supported by voluntary subscription, and as yet the principle has not been applied for the benefit of the masses of the people, although there is a large pier in Jackson Park on which fishing is permitted, and which is visited by many hundreds a day throughout the summer. Cities on the sea-shore and on

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the great lakes, as well as those on the broader rivers, have not yet come to a realization of the great recreative possibilities of waterways such as one finds almost universally in Germany.

Boston has added to its outdoor gymnasiums similar equipment for indoor athletics in two public gymnasiums, the forerunners it may be hoped of similar establishments in other cities. The influence being exerted by public-school gymnasiums on the one hand, and by the German Turner societies on the other, will inevitably lead to more democratic forms of indoor provision for athletics than are to be found in the athletic clubs, Young Men's Christian Associations, and such other private bodies, ministering to the wants of select groups.

In most of the large cities to-day philanthropic organizations or individuals encourage summer outings for the poor. A step beyond this has been taken by Boston, which conducted under Mayor Quincy's administration a municipal camp for boys, similar to a like institution on Pelham Bay under the direction of New York philanthropists. The Boston camp was located in Boston Bay, on Long Island, and so situated that drainage was made easy. Eleven tents, each accommodating nine boys, were provided, in addition to an administration tent on an elevation overlooking the others. The dining and entertainment hall was located in a large wooden pavilion, which served for added shelter on stormy days and a place where all the members could gather at once, while

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not interfering with the primitive life which was cultivated in the camp. There was naturally no difficulty in securing boys to visit the camp, as the applications greatly outnumbered the capacity of the place, although it was found that frequently boys wanted to return home on account of homesickness before the end of their week's visit, partly accounted for perhaps by the fact that the absence of trees made the island somewhat desolate during the hotter summer days. In order that all the boys should not be new to the camp, fifty were sent on Monday and fifty on Thursday, each squad to remain one week. Outdoor games and rural occupations, as well as indoor lectures and entertainments and manual training classes, occupied the day.¹

¹ A day's programme may indicate how the time was used, and suggest methods for similar enterprises.

6:00 A.M., reveille; 6:30 A.M., roll-call and drill; 6:55 A.M., salute to colors; 7:15 A.M., breakfast; 8:15 A.M., police duty; 9:00 A.M., inspection of quarters; 9:30 A.M., guard mount; until 5:30 P.M., recreation and lectures; 6:00 P.M., supper; —, sunset flag; 8:00 P.M., camp-fire talks; 9:30 P.M., taps.

The entire cost of the camp was as follows:—

Amount expended for permanent equipment,	\$ 977.72
Amount expended for subsistence, \$ 636.77	
" " " salaries, 427.97	
" " " boats, etc., 239.50	
" " " clerical work, 125.00	
" " " printing, etc., 66.08	
" " " miscellaneous, 26.04	\$ 1,521.36
Total amount expended,	\$ 2,499.08
Appropriations for the work,	\$ 2,500.00
Per capita cost of maintenance,	\$ 1.83

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This attempt was obviously an experiment, and it cannot be said to have been so successful as to encourage immediate imitation on the part of other municipalities, although the superior location of the Pelham Bay camp in New York, or the voluntary management, secured greater success there. The significance of the experiment is rather in suggesting the vast possibilities of municipal provisions for recreation, and the necessity of "proving all things and holding fast that which is good."

The strain of modern industry and the monotony of city streets necessitate forms of diversion which are not always within reach of individual incomes nor suggested by individual knowledge or taste. If the American cities are not yet ready to follow the lead of European municipalities in the provision of opera and the drama, they may at least consistently extend the widely accepted idea of public recreation in the parks to the related institutions which have already been established in some of the cities. The children may well have much of their play provided by the board of education in connection with the schoolhouses, but wholesome recreation for adults and opportunities for whole families and communities to enjoy their pastimes together require a larger conception on the part of municipal officials and larger appropriations for recreation. The restriction of Sunday work, the extension of the Saturday half-holiday, the better observance of national festivals, the increase in the number of those enjoying summer

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vacations, the limitations of the hours of labor, the enlarged conception of the functions of the municipality, including higher ideals of education and recreation, are all working toward a standard of living which will make it possible for people in American cities to take recreation more seriously, while they may at the same time be less serious in those hours devoted to recreation. A great relief will come to our prosaic life when public recreation is founded on the principle that "the child is father to the man."

CHAPTER X

PUBLIC CONTROL, OWNERSHIP, AND OPERATION

THE questions which naturally arise after a survey of American municipal activities are: Do these activities satisfy communal wants, and are the means subordinate to the ends? When one sees the financial and physical dominance in municipal affairs of the transportation systems, or witnesses the encroachment on the life of the citizens of ill-paved and unclean streets, or observes streets frequently torn up to make place for wires and pipes of various kinds, or is oppressed by too frequent vistas of a miscellaneous collection of telegraph, telephone, electric light, gas, and trolley poles and standards, to say nothing of the ubiquitous signboard, one is inclined to wonder when the preparations are to be completed and life is to begin. The discontent of the citizen increases if he sees public officials serving the corporations at the expense of their constituents, health commissioners more solicitous for the landlord than for the tenant, smoke inspectors derelict in duty while influential manufacturers and apartment house owners ignore the well-being of the community, public library trustees accepting benefac-

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tions designed for the public and then restricting the use to a favored few, school board members resenting advice given to them by the public which pays for the schools, or park commissioners instructed to provide playgrounds for the children but possessed by an infatuation for grass. It is most encouraging to find, in spite of the assertiveness of some of the public service corporations and the failure of some of the municipal departments to satisfy the needs of the community, that there has been a most notable development in the last decade in the extension of municipal functions and their efficient performance.

The object of municipal government is to insure a free life for each citizen. The life of the citizen has no significance unless it is a free life. In order to secure a free life for the citizen the municipal governments have been compelled, as the State has been, to abandon some of their former functions.¹ Government has ceased to regulate religion, at least in our country, confining itself to the relations of man to man, leaving to the church authorities the relations of man to the Divine Being. Regulations were once imposed with regard to marriage, with regard to the question of the clothes one should wear, or the hour at which one should go home at night. These interferences with human liberty have been abandoned, as the

¹ Green, T. H., "Principles of Political Obligation" (Longmans). Maltbie, Milo Roy, "Municipal Functions" (*Municipal Affairs*, December, 1898, Chap. ix).

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conception of the free life has extended. To-day the development of municipal government is in the direction of the extension of functions, but this again is with a view to permitting a free life on the part of the citizen. Liberty accorded individuals in the name of industrial freedom has been abused and it has become necessary to impose restrictions in the interest of all the citizens.¹

In the development of the means of satisfying communal wants three stages are observed : Public

¹ The directions in which municipal functions are naturally extending have been summed up in the following categories suggested by Sidney Webb. ("Municipal Socialism." Chapter in the Wholesale Coöperative Society's *Annual*, 1898.)

1. Where the consumption of a commodity is compulsory, there the municipality is undertaking its provision, e.g. water supply.
2. Where no pecuniary return is received for the supply of any commodity or service, the municipal government undertakes it, e.g. streets and sewers.
3. Where the service is furnished irrespective of cost, it is of necessity assumed by the municipality, e.g. schools.
4. Where the good of the community demands that the consumption of any commodity or service be as great as possible, there municipal intervention is necessary, e.g. food inspection.
5. On the contrary, where it is desirable that the consumption be as small as possible, public regulation is necessary, e.g. the liquor traffic.
6. The municipality is controlling municipal monopolies.
7. A kindred case is where monopoly is desirable, e.g. street railways.
8. Another form of municipal control is found in the execution of public works.
9. Other services in which municipal control is necessary are those which make possible an improved standard of consumption, e.g. lodging houses.

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control, public ownership, public operation. That some form of regulation is indispensable is emphasized every day by the experience of those cities which have granted unlimited franchises. While many communities have surrendered valuable privileges stretching over generations, nearly every American city is at present imposing on its public service corporations greater restrictions than ever before. These limitations may sometimes be unreasonable from the standpoint of the corporations, or unwise from that of the city; they may occasionally be devised for the purpose of sandbagging, but they are usually designed to protect public interests, and they are for the most part quite inadequate.

Public control is ineffective unless public ownership is a controlling and corrective possibility. If the public sentiment is not educated to the point of public ownership, it is unlikely to make public regulation effective. Public ownership may often be retarded by a charter, the heritage of a less highly developed sense of the public needs, or franchises which confer privileges for a considerable time, and public control, if possible at all, may then be effective until public ownership becomes feasible. So powerful are the great corporations, not only in defending their own interests, but in shaping public opinion, that a satisfactory measure of public control is unlikely in any public service until it is extended to the chief routine functions.

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Public regulation instead of public ownership implies an automatic political system, and hence belongs in the category of antiquated political ideas. The notion is still widely prevalent that political machinery will run itself as the result of annual elections. The old system of checks, devised by those who mistrusted the people, is supposed to make public service corporations satisfy the public needs better than the government officials can. The fact is often overlooked that when public functions are performed by the circuitous methods of franchise or contract there are always the additional expense and difficulty of inspection. No hocus-pocus of doctrinaire politicians and economists can make these obstacles appear as safeguards to an enlightened citizenship.

Encouragement is given to this fallacy by the disastrous consequences of inexperience in public control, due to an unwarranted confidence in the beneficence of private industry on the one hand or automatic political machinery on the other. The most patent example is perhaps that of the Philadelphia Gas Works, described in a former chapter. The apathy and ignorance of the people permitted shrewd manipulators to connive with the city officials in a plan to render the gas works inefficient. This gave the excuse to abandon municipal operation and lease the works to a private corporation. The fact that another body of reputable citizens offered to pay a larger sum

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for the privilege of operating the gas works, but were ignored by the officials, indicates how little the people were represented by the administration. This experience had the educational value, at all events, of exciting such opposition that similar wrecking methods followed in the case of the water system were unavailing, although the citizens have been so little aroused that they still tolerate many of the corrupt officials.

The progressive efficiency of municipal control, ownership, and operation are illustrated by many of the public activities described in the former chapters. The entire absence of public control is responsible for the inconvenience to the public caused by the inadequate facilities for entering the Grand Central Station in New York. The criminal negligence of the officials of the New York Central and Hudson River Railway is responsible not only for the fatal disaster of last winter, but is made difficult of correction because the traditions of the people are favorable to the independence of the company. The difference between the chaotic conditions of New York and the admirable facilities of the Boston Union stations is wholly one of public regulation. It is doubtful if the railways of Boston could have come to an agreement providing such admirable approaches to the city as they now enjoy, and it is unlikely that in any case this generation would have witnessed the advance, without public regulation. Yet when the coördination of the transpor-

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tation facilities was effected, the railways gained almost as much as the public. The magnificent prospective station at Washington will have been due to the wisdom of one of the commissioners and the president of the Pennsylvania Railway Company; but it will be based on the public control made possible by the ambitious plans for the improvement of Washington.

The firmness of successive administrations in Chicago has brought about its wonderful record of track elevation which grows more significant every year. The methods have been those of persuasion supported by inexorable public statutes. In contrast with the accomplishments of this city must be noted the helplessness of Buffalo, St. Paul, Joliet, and other cities in which, as has been mentioned, the railways have proved more powerful than the public officials. The difference between the cheap gas of Ohio and the expensive gas of Massachusetts is due to public control. Although the people are supposed to be represented by a gas commission in Massachusetts, its failure is undoubtedly due to the limitation of its powers, so that it does not, or cannot, apply the alternative of public ownership which has proved so effective in Ohio. Public regulation has also given Detroit, Cleveland, and Columbus lower railway fares than most of the other cities enjoy, substituted the grooved rail for the obnoxious old rail in Washington, Louisville, and elsewhere, has compelled companies to put their overhead

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wires in conduits in many cities, has cleared out many of the New York tenements by more stringent building laws, has made possible such elaborate systems of coöperation as the metropolitan organizations of the Boston district, and has gained for Massachusetts the enviable reputation of leading the country in the restrictions placed upon public service corporations, and in the extension of public school and library facilities.

Public ownership has resulted in a fuller satisfaction of communal wants when actually applied than when held in reserve as a disciplinary force. No regulation of the New York docks or the Brooklyn bridge could compare with the advantage of receiving the revenues derived directly from them, in addition to the still more important fact of possession, with any resultant gain which might come from what would otherwise be unearned increment. The contrast between the Brooklyn and St. Louis bridges, noted in a previous chapter, was not only remarkable on account of the vastly superior benefits accruing to the New York public, but in the power of continued control which comes from public ownership. The appreciation of public ownership was shown in the recent vigorous antagonism of the Boston Elevated Railway's attempt to secure private ownership of the new subway. The difference between paying for the subway in thirty-five instead of fifty years, which is made possible by public ownership, is not so significant as the

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absolute control at the end of that time and the many opportunities for regulation in the meanwhile. In spite of the shameful lease of the Philadelphia Gas Works, the city still retains their ownership, and at the expiration of the lease will not have to pay a fancy price, in order to undertake public operation, as would be the case in a privately owned plant. The retention of the municipal operation of the Philadelphia water supply indicates the trend of public opinion, and shows that even public ownership is not an adequate protection.

Public ownership with private operation, such as one finds in the Philadelphia Gas Works, or the Brooklyn Bridge Railway has the great advantage over public control that new arrangements may be made without compelling the community to bear the fictitious burdens of modern stock manipulation ; but the fullest satisfaction of the public's necessities is found to-day in the case of those municipally owned plants which are also operated by public authorities. No system of regulating the fire department which will involve the slightest suspicion of profit-making could possibly satisfy the needs of to-day as they are met by the municipal fire departments. The old dame schools conducted for private profit are so antiquated that it would seem to many people absurd to point an analogy between them and some of our privately conducted public-service corporations, yet the evolution of industry and of

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municipal government is making privately owned and operated water works almost as anomalous. Indeed, it is nearly as common to find students, engineers, and business men distinguishing sharply between water works and other public utilities as it is to find those who make distinction between public and private schools. The contrast between public street cleaning and private street sprinkling in New York, or the minor instance of Evanston, Illinois, to be mentioned presently, the difference between the cost of electric lighting in Allegheny and Pittsburg, or the cost of water when supplied to New York by its own water works and by the proposed Ramapo Company contract, are a few of the multitude of witnesses which may be summoned on behalf of that most rigid form of public regulation which puts both the ownership and operation in the hands of the representatives of the people.

The tendency toward municipal ownership of these new functions raises some questions with regard to the other than material advantages to the community of public ownership. In opposition to a time-honored contention, it may be urged that public ownership promotes private initiative. When a private company has developed organization to a point where it may be said to have reached stability, where improvements will be much fewer in the future than they have been in the past, where the possession of unusual privileges in a well established industrial function insures a steady

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income to the investors, it may be said that the time is ripe for public ownership. The needs of the community will be furthered by the enjoyment of the revenues received from such an industry, but better still, by the possibility of a reduction in the cost of the commodity or service. The community will also be benefited by setting free the capital and energy involved in this activity, and enabling these to find a new outlet in the supply of other human wants.

The great function of private capital and private initiative is in experimentation and development of undiscovered and unrecognized resources. If the individuals owning the capital involved in such enterprises, are to be assured a permanent means of livelihood, private initiative is so far curtailed. The public service will not be so well performed if the organization is strong enough to have a virtual or actual monopoly, and new fields of development will remain neglected because of the lack of necessity for seeking these opportunities for investment. It is sometimes paradoxically urged that the community unfairly displaces certain individuals by the public ownership of any activity. On the contrary, the proprietors have been adequately rewarded and have the means of seeking new opportunities, which may be of benefit not only to them, but to others; while the community gains directly by cheapened service or a relief of taxation, and indirectly by the new activities promoted through the freeing of private capital.

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Expenditure in the purchase or provision of such an enterprise means taxation, which would otherwise never have taken place, and is a form of collective consumption which it is desirable to promote, and belongs in the same category as the increase of private consumption. So long as there is something desirable provided, and there is no excessive burden placed upon any one, it is to the community's advantage. On the other hand, many new industries fail to develop, and many old ones languish, because of the possession of special privileges by individuals who, at one time, were very energetic in promoting, directly or indirectly, the interests of the community.

Mr. Yerkes came to Chicago some years ago, before the local capitalists or the public authorities had awakened to the value of the street railway franchises, and made a fortune by developing the systems and manipulating the stock. Then, when the public value of the franchises was discovered, the boodle aldermen were nearly all relegated to obscurity, and a more rigid public control was threatened, he decamped, leaving the subsequent investors to deal with the problems of franchise extension and municipal ownership. There is no doubt that the prospect of a closer municipal supervision set free capital as unmistakably as if the city had bought the properties. Mr. Yerkes's initiative is made available for London's underground railway by the growth of public control in Chicago.

It is one of the most common occurrences in the

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country to-day for real estate and its dependent industries to receive a stimulus by the establishment and development of parks. This is so far true that not only are the advantages of the unearned increment to private individuals obvious, but many subdivisions of cities laid out by real estate speculators include parks and driveways modelled after the improvements of municipal authorities. The encouragement which is given to firms engaged in paving and the supply of paving materials by the growth of public spirit and municipal control is so important that some municipal magazines maintain their existence largely by the subsidies of paving companies. Individual initiative could not possibly produce the street improvements which come from a more intelligent public control. Many communities lack good paving because the citizens are subject to such a small measure of public control that they cannot agree upon financial methods or other prerequisites to the extension of paving. Kankakee, Illinois, has adopted the admirable plan of paving the entire street whenever the property holders on both sides lay cement walks and curbs. The greatest aid to private initiative and progress is the public satisfaction of routine functions.

Public ownership secures more democratic service. The old idea of the spoils system was that the advantages of government were distributed by periodically passing around the offices. The genuine democratic method is constantly to dis-

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tribute the services to all the people. In spite of the peculiar administrative methods of Washington, governed as it is without the consent of the inhabitants, the services are often performed according to democratic principles for the benefit of the people, and only incidentally to the advantage of corporations. The supervision of public service corporations is more rigid in Washington than elsewhere in the country, and the services are better performed. Similar public control is exercised in the cities of Massachusetts in the case of the street railways, which receive only indeterminate franchises, while the gas companies, which have been treated more liberally, are notoriously inefficient. Individual instances without number might be mentioned of the gain in general efficiency and the elimination of favoritism by the strengthening of public control. Such economies as come from the coördination of services, as illustrated by the joint operation of Duluth's water and gas plants, are enjoyed by the entire community.

The impossibility of serving the people while some of the fundamental public functions remain in private hands is shown by the experience of those cities whose devotion to an outworn and pernicious theory has induced them to yield even the construction of sewers to private corporations. A franchise was granted to the New Orleans Sewerage Company in return for which only 14,725 feet of pipe sewers and 3658 feet of brick sewers

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have been constructed, for which the company is now demanding \$229,444, while the city appraises them at \$170,000.¹ Scarcely more advantageous has been the experience of Galveston, where the sewers were constructed by a contractor. Baltimore, which is still the most backward of Northern cities in sewage disposal, had to meet the suggestion of permitting private parties to construct its sewerage system, which might have been expected in a city where municipal functions have been so little developed. Fortunately, the larger experiences of other cities are so influential that the people of Baltimore are to profit by the advantages of public ownership.

Among the other democratic benefits to be derived from the growth of public ownership is the choice of a class of officials now spoiled by private corporations and the setting free for public service of the frequently able and public-spirited men who are apathetic when they own stock. The indifference of this latter class, although often composed of honest and intelligent men, is one of the great hindrances to the conduct of municipal functions for the common good, as has been vividly set forth in the writings of John Jay Chapman.² There is too little appreciation of the former difficulty, that of being compelled to choose for public offices, if the best talent is wanted, men who are to-day too often trained in antagonism to all gov-

¹ *New Orleans Picayune*, February 15, 1902.

² Chapman, *Causes and Consequences, Practical Politics*.

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ernmental activities. One of the highest officials in the United States government, recently appointed to his post, has debauched the municipal government of one of our cities by his methods in the control of the street railway company of which he is president. He was also postmaster of the same city, and through the influence of that position secured certain contracts for the equipment of the new post office by methods which caused a scandal that was only short-lived because of the weakness of the public memory. Such a man probably justifies his conduct by the contention that the success of private industry is more necessary to the prosperity of the country than is political purity, but he certainly stultifies himself in then taking public office.

In contrast with such methods there are fortunately occasional examples which indicate the possibility of securing the highest type of municipal servants. Mayor Tom Johnson of Cleveland has been able to select as the superintendent of water works and his coworker in reducing the evasion of taxes one of the chief municipal experts of the country, Dr. E. W. Bemis, whose choice by Governor Pingree as labor commissioner of Michigan provoked such an outcry on account of his being a non-resident that his selection was abandoned. When the new superintendent of Lincoln Park in Chicago displaced an inefficient workman, the latter raised an unavailing protest that while he was a native of Chicago the superintendent had been

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imported from Cincinnati. As the value of public control is appreciated, these examples will multiply because of the higher estimate set upon public service than upon spoils and jobbery.

Public ownership promotes good citizenship. Another ancient formula which must be abandoned, as we gather experience from our modern activities, is that the best government is that which governs least. The united experience of the nations and cities of the world to-day proves that where the functions of government are most limited, there will be found the worst government, national or municipal, examples of which may be drawn from China, Turkey, or the United States. The chief cause of municipal corruption in this country is the relative unimportance of the municipal government. Where municipal functions have been largely extended, as in the British cities, there corruption is eliminated, partly by the removal of the corrupting influence, so dominant in our American municipalities, partly by the education of the citizen through responsibility. Where the citizen finds difficulty in taking part in municipal matters, as is the case with our benighted system of primaries and conventions, and where there is little to warrant his diverting time and attention from private industry to public welfare, there the citizen remains uneducated by political experience. All forms of organization which give the opportunity for self-government strengthen citizenship. If the affairs of the municipality are not momen-

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tous enough to attract his attention, his education as a citizen is in so far neglected.

The work which has been done by the Citizens' Union in New York City, in the overthrow of Tammany, has been largely the result of a constructive programme. The extension of municipal functions has given the opportunity for an appeal to the citizens on behalf not simply of honest government, but of the public satisfaction of their wants. The pamphlets issued by the Union have been devoted to such subjects as street paving and cleaning, public schools, charitable institutions, and other public activities, from the standpoint, not so much of administration or maladministration, as from that of the performance of certain public services. Similar organizations in Chicago, the Citizens' Association and the Municipal Voters' League, have been inevitably led to the advocacy of certain forms of public activity. The latter organization, as its name implies, is designed to inform the voter as to the qualifications of municipal candidates, but in a recent public hearing before the traction committee of the City Council, they were the most zealous advocates of a more rigid public control. The moving spirit in this organization was a member of the City Council some years ago, who as such performed pioneer service in exposing boodle aldermen. On his entrance into the Council, as a known reformer, he was urged by his colleagues to devote himself to giving publicity to abuses, but not to mention names. He wisely preferred the

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method of making the responsibility for official misdeeds personal. This was the beginning of the entrance of "honest" aldermen into the Chicago City Council, a most important pioneer step in the better performance of public functions. The demand now is, however, for aldermen both honest and efficient. The neutral type, too often honest because of inexperience or ignorance, such as the present chairman of the Chicago street railway committee, appointed by the mayor because of his supposed integrity and known incapacity, is giving way to the progressive and aggressive alderman, whose candidacy is especially urged by the organizations representing intelligent voters. The interest of the citizens is very much enhanced by their being able to vote at the same time for men and principles.

The St. Paul Civic League, an organization of public-spirited and intelligent women, has not only been instrumental in assisting in the adoption of a new charter in that city, but has brought about improvements in such public services as garbage disposition and has secured the extension of the park system, playgrounds, and vacation schools. The latter endeavors have stimulated citizenship, and the passage of the charter itself was demanded on account of its including regulations for the granting of franchises, providing compensation to the city and similar features of public control, rather than for any theoretical administrative advantages.

The mayor of Duluth in a recent message to the

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people, after stating the accomplishments of the city administration, and their expectations for the coming year, urged the organization of a Civic Improvement Society to stimulate the necessary public spirit for the approval of official acts. Such an organization has been effected, and is carrying on the work outlined by him as an expression of the citizenship which resulted from experience in the benefits of public control. The late Mayor C. E. Bolton, of East Cleveland, issued the year before his death perhaps the most attractive annual report which has ever come from the pen of a municipal executive. It was profusely and beautifully illustrated, showing the actual work accomplished by the city officials, and a copy was sent to each householder. The response, as might be expected, even from the wealthy captains of industry and other conservative suburbanites, was an indorsement of the progressive policy of the authorities. The similar, well-illustrated reports of the public works and other departments of Boston make an appeal directly to the citizen's interest in the satisfactory performance of public services. The programme provided by the Harrisburg Improvement Association at the last election in that city included, in addition to the choice of an excellent ticket, a referendum authorizing the issuing of bonds to the amount of a million dollars for a new sewerage system, a filtration plant for the water supply, a system of parks, boulevards, and playgrounds, and the paving of the street intersections.

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Good citizenship triumphed because something which interested the voters was offered them.

Very often the people in a city or district are diverted by the appearance of coöperative effort. In Evanston, a suburb of Chicago, there are associations including the residents of some of the chief streets which undertake the function of street sprinkling, with the result that these attractive residence streets are well and economically sprinkled. The complacency with which these good citizens regard their accomplishment is somewhat disappointing to the visitor who sees that the main streets of this pleasant suburb are as dirty as those of Chicago, and consequently in summer the air is filled with dust. A partial explanation of this must be found in the fact that some of the best citizens take no interest in the cleanliness of the city because their own little district is satisfactorily cared for. When the functions performed by the municipal authorities are few, the citizens take little interest in them. The officials must be encouraged in the neglect of existing duties, where the citizens manifest no concern as to the general welfare of the city. For the average citizen and official the affairs of the community must be "writ large."

Public ownership provides for the coming generation and thus fulfils the community's law of life. The superior experience and more immediate interests of private capital make for energy and sometimes for efficiency, but there is no permanence. One of the most serious difficulties involved

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in the private performance of services which are essential to public welfare is the fact that the individuals in control, however honest they may be, have no inducement to make provision for the needs of the coming generation. Thus the community is frequently saddled with burdens which remain a tax upon the resources of a generation in no way responsible for these actions. Franchises which extend beyond one generation are utterly indefensible. There is an abundance of experience to prove that the life of one generation is long enough to provide adequate remuneration for such investments, and the numerous injustices worked by any greater extension of such franchises furnish sufficient evidence in favor of short franchises and subsequent public ownership. The municipality possesses immortality as no individuals or corporations can, and its interests, even more than those of a family, must be anticipated, so that the coming generation may not be sacrificed to the present. It is idle to suppose that the self-interest of the stockholders will protect the public in such purely speculative industries as modern public service corporations. The street railway corporations of Chicago have no depreciation fund, gambling on the future stockholders as well as the coming generation of Chicago.

The cost of postponing public control is one of the chief reasons why there should be a greater exercise of municipal authority, even when the character of the officials is such as to dismay sober

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citizens. The charter of the street railway company of Philadelphia gives the opportunity for municipal ownership at any time. Every franchise extension has made it increasingly difficult for that city to take possession of the street railways at any time in the future. The same is true of many other cities which have been helpless because of franchise conditions, and some of these have renewed franchises for periods of from twenty to fifty years without regard to the possible desirability of closer municipal control. One of the cardinal principles recognized by nearly all classes of citizens in Chicago to-day, and indorsed at the last election by an overwhelming referendum vote, is that however little the city may now be prepared for municipal ownership, a clause making that possible must be inserted in the new franchises for the protection of subsequent generations. Yet this protection may be unavailing, if, when the day of reckoning comes, the city can be made to assume all the financial burdens of watered stock.

The deplorable example of the Philadelphia Gas Works has been repeatedly cited, but the statement must be reiterated here, that however great the municipal corruption or the inefficiency of the service, it was a safeguard to the city to maintain municipal ownership of the plant. If Chicago, in the early days, had possessed such regulative power over the steam railways entering the city as Boston has developed under its rapid transit commission, it might have saved even the railways large sums of

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money when the time came for the extensive track elevation of the last decade, and it would certainly have led to such a unification of lines as would have eliminated some of the present stations. The Lake Shore & Michigan Southern and the Chicago, Rock Island & Pacific railways are now erecting a costly station at the very time when the possibility of a union of all lines entering the city from the south is being most seriously considered.

The power of a public-spirited official is indicated by one of the simple incidents of Mayor Tom Johnson's career in Cleveland. It became necessary to enlarge one of the public markets, which gave an opportunity as usual to interested parties to offer land for sale at exorbitant figures. To offset their wiles the mayor secured options on a number of other pieces of land in the neighborhood, and then when these speculators came to him and offered what seemed to be the most available piece of land for \$150,000, he showed them his options and offered them \$85,000. The committee laughed at him, but after repeated visits, extending over a period of a fortnight, during which their price was gradually reduced, they finally came to the mayor's terms. A disregard of the interests of future citizens would usually in such a case result in a compromise, which would be approved by most honest officials and citizens. A firm attitude on the part of the people's representative is due, not only his constituents, but the helpless generations which must help pay the bills.

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Many people are careless to-day about such a question as that of permitting street railway companies to charge a straight five-cent fare. It is contended even by those who have no interest in the companies that this is not an exorbitant price, as it is only a fair remuneration for the service. In fact, it is a burdensome charge on thousands of working people and an unfair tax. If it is maintained, as is sometimes the case, in order to secure compensation for the city, it is also an excuse for the companies to extend their outlying branches, and thus maintain their reputation for providing long rides for a small sum. There are doubtless many such extensions made with the direct purpose of sustaining this specious argument, whereas it is well known that the revenue is derived from the short-distance riders. A stricter regulation by the municipality would prevent a future generation's being hampered by the cost of unnecessary extensions, by high fares paid to give dividends on watered stock, or in the price exacted when the municipality buys the plant.

Public ownership sustains and raises the standard of living of the workers. Where the municipality controls an enterprise, there is a maintenance of trade union standards of wages and hours, and sometimes even an improvement on these. The public is more solicitous with regard to its employés than many private employers, and at the same time has the power of establishing standards

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which excessive competition denies to private employers.¹

The most notable transformation in the conditions of the employés of any city was wrought by Colonel Waring in the system which he introduced into the Street Cleaning Department of New York.

The miserable dependents of Tammany became the self-respecting civil servants working under a rational system of rewards and penalties with a reasonable minimum wage, having their position recognized by appropriate uniforms, which brought them respect from the public as well as from themselves. In addition to the encouragement given to these public servants, emphasis was also laid on their obligations to the citizens. The good workman was the

¹ The possibility of the maintenance of such a higher standard is well illustrated by the figures prepared by Professor Frank Parsons.

HOURS AND WAGES UNDER PUBLIC AND PRIVATE OWNERSHIP

	PUBLIC		PRIVATE		
	Average hours per day	Average pay per year	Average hours per day	Average pay per year	
Railway Mail Clerks.	7	\$1030	12	\$540	Western Union Operators.
Postal Carriers	8	900	12	720	Conductors and Motor-men. Philadelphia street railways. St. Louis about the same.
Brooklyn Bridge Railway Trainmen.	8	1000	10	700	Trainmen on New York and Brooklyn L Roads.
Boston Police.	7½	1210	10	520	Employés West End Street Railway, Boston.

— Parsons, "The City for the People."

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result of a demand for good workmanship, and hence it is interesting to see the way in which the interests of the public were safeguarded. This makes special mention desirable of the system of penalties, as indicating how a man's conduct of his work may be recorded and he may still be given ample opportunity to make good unavoidable neglect. The appended table shows graphically the chief penalties.¹

¹ Ellsworth, "Colonel Waring's White Angels," *The Outlook*, June 27, 1896.

"D" means dismissal. 1, 2, 3, 5, and 10 mean forfeiture of so many days' pay.

RULE	CHARACTER OF OFFENCE	PENALTY			
		Offence			
		1st	2d	3d	4th
1	Absence for more than five days without authority of the Commissioner	D			
2	Failure to report or send notice to foreman when sick	1	3	D	
3	Absence from roll-call at proper hour	1	2	3	D
5	Failure to provide himself with prescribed uniform, oil-skin suits, sweater, and badge, after reasonable time	D			
6	Failure to wear prescribed uniform and badge while on duty in the manner directed by orders	3	D		
10	Neglecting or abusing a horse, whipping or striking a horse, using a horse who is sick or lame, and failing to take such horse to stable or reporting him to foreman	D			
12	Neglecting to have lost shoes replaced on horse at nearest department stable as soon as practicable	1	3	5	D
16	Failure to remove bits and to dump carts while feeding at noon	5	D		
17	Deliberately trotting or galloping a horse	5	10	D	
19	Loitering at work	2	5	D	
24	Neglecting to pick up small stones found on route, and failing to report large ones or other obstructions lying in the street, such as gutter planks, etc., to section foreman	1	3	5	D
29	Neglecting to keep load covered and allowing it to blow or spill on street	3	D		
32	Accepting or demanding a fee or gratuity for work done	D			
33	Entering a liquor saloon during work hours	3	D		
34	Being under the influence of liquor while on duty	D			
43	Being boisterous or using profane language or any incivility to citizens	1	3	5	D
46	Failure to sweep properly	1	2	3	D
48	Absence from post of duty without reasonable excuse	2	3	5	D

PUBLIC CONTROL

One of the desirable features of municipal regulation, of which there is unfortunately only a unique instance, is that provision of the street railway franchise of Galesburg, Illinois, which secures to the employés the protection of an arbitration clause. A step beyond this is found of course in the "direct employment" of the municipal departments themselves.¹ Significant examples are the tunnelling and street work being done now in Cleveland, without the intervention of the contractor, and the system in vogue in the South Parks of Chicago. The commissioners of this park system dispense with the contractor whenever possible, managing their own affairs from the building of roads and the making of gardens to the provision of boats and refreshments for the patrons of the parks. In Jackson Park, the beautiful electric launches, legacies of the World's Fair, are added to the usual row boats as part of the municipal provision for recreation. The refectories of Washington and Jackson parks are among the best equipped to be found in the country, and everything provided there for the refreshment of the people, from food to soda water, is prepared by public employés.²

¹ There are many illustrations of the systems of day labor in American cities, including the street cleaning departments of New York, Chicago, Boston, Cincinnati, Pittsburg, Detroit, Minneapolis, Kansas City, and many other cities; and the removal of garbage and ashes in New York, Chicago, Boston, Baltimore, Cincinnati, New Orleans, Louisville, Rochester, and elsewhere.

² This is only following the best business methods of to-day, in which the integration of processes is one of the great economies.

AMERICAN MUNICIPAL PROGRESS

The most advanced step in the protection of the interests of the workers is that taken by Boston in its provision for compensation, to those who lost remunerative positions by the establishment of the reservoirs at West Boylston.¹

More important than the standard of living of the employés of the city is the provision for the higher life of the citizen, made possible by the extension of municipal functions. As there is a multiplication of public schools, libraries, museums,

The Pennsylvania Railway Company checks parcels at its New York stations for five cents per forty-eight hours, performing the service by its own employés. The New York Central Railway, which intrusts this function to a concessionaire, does it no better, but charges the public four times as much, ten cents per twenty-four hours.

¹ The Act reads : —

“Section 1. Any resident of the town of West Boylston, employed by any corporation, partnership, or individual at the time when the plant of such corporation, partnership, or individual is taken and work therein stopped, on account of a reservoir for the Metropolitan Water Supply, and who is obliged, by reason of such taking, to seek employment elsewhere, shall have the right for one year from the termination of such employment as aforesaid, to file a claim for damages with the Metropolitan Water Commission, and if the same is not settled within sixty days within the filing thereof, he may bring a bill of equity in the superior court for the county of Worcester for the adjudication and collection of such damages.

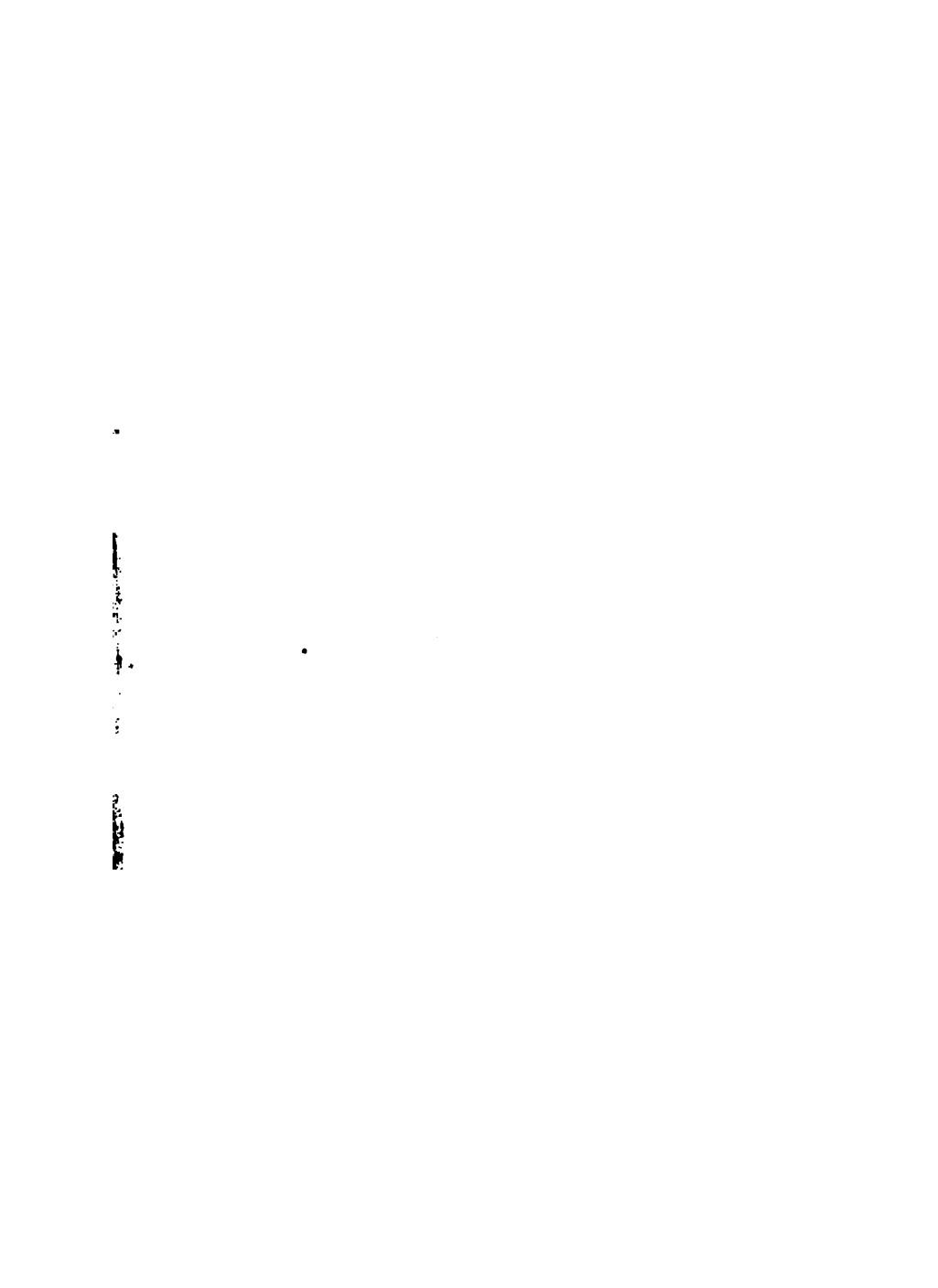
“Section 2. It shall be the duty of the court to ascertain whether or not such claimants have resided, and been employed, and deprived of employment as specified in this act, and if so, to issue a decree in favor of each to recover the actual damage which he has suffered by reason of such loss of employment, not, however, to exceed the sum of his wages for six months at the rate of wages paid to him for the last six months prior to such suspension of employment.”

PUBLIC CONTROL

parks, playgrounds, public baths, improved supplies of water and light, better transportation, and other public facilities, the life of the community is enriched. Permanent public improvements are effected, and each succeeding generation must profit by the heritage which it thus receives. What Professor Smart has said about society in general is particularly pertinent to municipal life:¹

"The progress of human society chiefly takes the form of making the world a more comfortable place for man to live in, and such improvements pass away out of the range of valuation; they become brighter, healthier *conditions* of our life. Much of our parent wealth exists in the form of a background of the community's life; the true line of progress is that this background should be common property; that the community should continually be adding to the free gifts of nature, changes of physical environment, that make the house of life into the home of man."

¹ Smart, "Studies in Economics."



APPENDIX I

(CHAPTER I)

A COMPARISON OF STATISTICS RETURNED BY OFFICIALS IN BOSTON AND ST. LOUIS (1901)

	BOSTON	ST. LOUIS
<i>Gas works.</i>		
Income . . .	Unavailable.	Unavailable.
Expenditures .	do.	do.
Ownership . .	Private.	Private.
Free service for city . . .	No.	No.
Charges . . .	Fixed by legisla- ture, \$1 per 1000 ft.; 90¢ bill pending.	\$1.10 for light and 90¢ for fuel per 1000 ft., with a \$.10 per 1000 ft. discount.
<i>Electric light and power.</i>		
Income . . .	Unavailable.	Unavailable.
Expenditures .	do.	do.
Ownership . .	Private.	Private.
Free service for city . . .	No.	No.
Charges . . .		To city \$23.77 per 1000 light hours. Except one, com- panies pay 5% gross receipts in consid- eration of use of streets.

AMERICAN MUNICIPAL PROGRESS

	BOSTON	ST. LOUIS
<i>Water works.</i>		
Income . . .	(1900-01) \$2,561,- 722.58.	\$1,620,860.64.
Expenditure .	(1900-01) \$2,455,- 257.31.	\$630,708.96 exps. \$854,099.68 extens'n.
Ownership . .	State.	Municipal.
Free service for city . . .	Yes.	Yes.
Charges . . .	Based on assessed valuation dwell- ing houses.	Meter, \$.01 to \$.03 per 100 gallons.
Source . . .	Lake and reser- voirs ; pure.	River ; fairly pure.
Filtered . . .	Filter beds ; no final filtering.	No.
Gallons per cap- ita . . .	Not available.	105.
<i>Markets and Abat- toirs.</i>		
Income . . .	\$90,672.18 (mar- kets).	\$29,764.75 (mar- kets).
Expenditure .	\$9,330.28.	\$6,578.77 (2 private markets and 1 pri- vate abattoir).
<i>Libraries.</i>		
Reference or loan . . .	Both.	Both.
Public endow- ment . . .	Yes.	Yes.
Building, how secured . . .	Owned by city.	None.
Number of vol- umes . . .	772,432.	150,000.

APPENDIX I

	BOSTON	St. LOUIS
Number circulated last year	1,317,497.	740,179.
Open shelves .	Yes.	Yes.
<i>Museums or Art Galleries.</i>		
Private endowment . . .	Yes.	Yes.
Building, how secured . . .	Private subscription.	
<i>Schools.</i>		
Per cent of school age in attendance .	92.45%.	
Do grades or high school or both have manual training	Both.	Both.
Commercial . . .	Coml. branches taught.	
Art	5 evening drawing schools, art branches taught in schools.	Yes.
School board, how chosen .	24 members, 8 elected annually, city election, women voting.	
Teachers, how chosen . . .	Elected by board.	

AMERICAN MUNICIPAL PROGRESS

	BOSTON	St. LOUIS
Per capita expenses . . .	\$32.96 (per pupil).	
Night school or lectures . . .	18 evening schools.	
Kindergartens . . .	74.	
Baths	1 high school. 1 grammar school. 3 of each being built .	
Gymnasiums . .	4 high schools. 3 high schools being built will have.	
Coeducation . .	Yes.	
Free text-books . .	Yes.	
<i>Street railways.</i>		
One company or more . . .	More.	Two.
Length of franchise . . .	Indeterminate.	Expire 1912 to 1948.
Terms of franchise . . .		Payment fixed sum or percentage.
Fares	Five cents, city limits.	Five cents. Half fare children 3-12.
Transfers . . .	Free at "stations." 3¢ on car.	To any intersecting line.
Power	Electricity.	Electricity.
Poles	Yes.	Yes.
Paving	Between rails, 18 inches each side.	Between rails, and 1 foot outside.
Cleaning	Clear of snow in winter.	Clear of snow.

APPENDIX I

	BOSTON	St. Louis
Character of service		Better before consolidation.
Revenues . . .		\$79,071.59 in addition to general tax.
<i>Telegraph and Telephone.</i>		
Number of streets used .		Mileage: Telegraph 32 Telephone 374 Telephone conduits 115
Poles	Yes, except long distance telephone and railway. All wires underground at rate of 2 miles of street per year.	Poles and underground.
Franchise . . .		
<i>Steam railways.</i>		
Grade crossings	Yes. State law requires gradual abolishment; most in city abolished.	Mostly, 14 by viaducts.
Are stations well located and adjoining streets spacious . .	Yes.	Yes, except at Union station streets are not sufficiently spacious.

AMERICAN MUNICIPAL PROGRESS

	BOSTON	St. Louis
<i>Sewers.</i>		
Character of system . . .	Double and single, underground.	Combined system, underground.
Number of outfalls . . .	Two.	26.
Destination . . .	Pump out to sea.	Mississippi River.
Any use of sludge . . .	None.	None.
Relation of water supply to this or other cities . . .	None.	Discharge 7-14 miles below water supply.
<i>Garbage.</i>		
Method of collection . . .	Wagons.	Wagons. \$127,200 per year. Reduced by contractor at \$1.80 a ton.
Uses	Ashes dumped and for filling. Refuse and waste: 86% delivered to private company. Offal: 24% fed to hogs; 76% to private company.	Grease and fertilizer to contractor.
Cost	\$609,664.67.	\$192,900.

APPENDIX I

	BOSTON	St. Louis
<i>Street cleaning.</i>		
Cost	\$339,747.23.	\$25.00 per mile.
Effectiveness .		Neglected last years.
Methods, hand or machine .	Both.	Both.
Any use of ref- use	None.	None.
<i>Street Paving.</i>		
Character . .		
Square yards each material		Miles.
	Asphalt 225,811	Granite 53.48
	Granite blocks 1,912,176	Brick 16.79
	Brick 5,375	Asphalt 12.15
	Cobble 11,321	Wood 5.83
	Macadam 5,243,415	Telford 84.11
		Novaculite 7.78
		Macadam 259.02
		Limestone block .67
Square yards paved . . .	7,398,092.	439.83 miles.
Square yards unpaved . . .	1,841,051 (includ- ing 1,518,818 gravel streets.)	436.46 miles.
<i>Parks.</i>		
Number	29. Also 51 squares and street parks. 11 other bodies land used by public.	4 large, 12 small.
Acreage	Large parks 2,433.- 63; other 64.5.	2,078.

AMERICAN MUNICIPAL PROGRESS

	BOSTON	St. Louis
Distribution . . .	All parts city.	Good.
Natural . . .	10 largest about.	3.
Concessions . . .	2 refectories ; baths ; bath- houses.	Restaurant and boat- ing.
Small parks . . .	Yes (see above).	Yes (see above).
Metropolitan . . .	Outside city.	
Boulevards . . .		One.
<i>Other recreative in- stitutions.</i>	Playgrounds, out- door gymnas- iums in parks.	
<i>Public baths.</i>		
Number	1 bath-house, 13 floating baths, 6 beach baths, 2 river baths, 2 swimming pools, 2 gymnasium baths.	Four, not owned by city.
Charges	Free. \$6,867.77 from use suits and towels.	
Cost	\$108,359.00 — \$77,435.37 baths, \$16,223.24 gym- nasia, \$8,661.06 urinals.	
Summer or win- ter	Bath-house and gymnasia all year.'	

APPENDIX I

	BOSTON	ST. LOUIS
Kind	Shower, tubs, and plunge.	Shower and plunge.
<i>Cemeteries and Crematories.</i>		
Cemeteries . . .	18; 144.25 acres, property of city.	20, Potter's field, 19 associations.
Crematories . . .	2 private.	1 private.
<i>Public lands.</i>		
	For city buildings, and school and library lots, some land still owned and rented privately.	
<i>Bridges.</i>		
Number	121 highway. 27 park and foot.	34, — viaducts.
Free or toll . . .	Free.	Free.
Income	\$900 (excluding parks).	
Expenditures . . .	\$15,933.83.	\$34,050.88.
<i>Fire department.</i>		
Number of members	854.	516.
Expenditures . . .	\$1,209,047.02.	\$745,477.29.
Organization . . .	Fire commissioner appointed by mayor. Under chief.	Under chief.
Civil service . . .	Yes.	No.

AMERICAN MUNICIPAL PROGRESS

	BOSTON	St. Louis
<i>Police department.</i>		
Number of members . . .	1,295.	1,426.
Expenditure . .	\$1,663,984.92.	\$1,620,982.27.
Organization . .	Commissioners appointed by governor, — police board.	Police board.
Civil service . .	Yes.	No.
<i>Board of health.</i>		
Number of members . . .	3.	6.
Expenditure . .	\$159,085.96.	\$108,895.87 board of health ; \$19,241.23 quarantine and small-pox hospital ; \$192,900 garbage.
Organization . .	Board of commissioners, 1 appointed annually by mayor.	Mayor, president of council, member police board, 2 physicians, health commissioner.
Civil service . .	Yes.	No.
<i>Building inspectors.</i>		
Number of members . . .	1.	7.
Expenditures . .	\$97,569.76.	\$17,083.77.
Organization . .	Commissioner appointed by mayor.	Commissioner.
Civil service . .	Yes.	No.

APPENDIX I

	BOSTON	St. Louis
<i>Public buildings.</i>		
Original cost .		
Cost of main- tenance . .	\$269,589.89.	\$5,184.91 repairs. \$44,456.92 salaries and expenses.

AMERICAN MUNICIPAL PROGRESS

APPENDIX II (CHAPTER III)

TABLE

Prepared by the Commissioner of Public Works, Chicago, 1901
SHOWING COMPARISONS BETWEEN NEW YORK, PHILADELPHIA, BOSTON, AND CHICAGO, AS TO AREA, POPULATION, RECEIPTS, PRINCIPAL ITEMS OF EXPENDITURE, ETC., FOR THE YEAR 1900

ITEMS OF COMPARISON	NEW YORK	PHILADELPHIA ¹	BOSTON ¹	CHICAGO
Area in square miles	308.11	129.00	43.00	190.60
Population	3,437,202.	1,993,697.	560,892.	1,668,575.
Children enrolled in public schools	403,072.	147,395.	90,606.	249,725.
Miles of paved streets and alleys	1,737.80	1,067.00	489.55	1,324.00
Miles of unpaved streets and alleys	770.08	427.00	149.00	2,828.73
Total miles of streets and alleys	2,507.88	1,494.00	638.55	4,152.73
Miles of sewers	1,421.70	771.15	534.78	1,453.00
Miles of water supply pipes	1,444.19	1,307.66	706.02	1,872.06

APPENDIX II

ITEMS OF COMPARISON	NEW YORK	PHILADELPHIA ¹	BOSTON ¹	CHICAGO
Number of vessels entering and leaving harbor	14,019.	4,151.	5,819.	17,037.
<i>Taxable valuations:</i>				
Assessed valuation — realty	\$2,932,445,464.00	\$879,295,355.00	\$866,782,900.00	\$260,265,110.00
Assessed valuation — personal	545,806,565.00	79,306,600.00 ⁴	288,837,193.00	84,941,361.00 ¹³
Assessed valuation — total	3,478,252,029.00	938,601,955.00 ⁶	1,155,947,252.00	345,196,471.00 ¹⁸
Rate of taxation for all purposes	2.36% to 3.27%	1.85%	1.31%	6.11% to 7.23% ²⁰
Rate of taxation for city purposes	1.98%	1.16%	1.63% ²¹	
Bonded or interest bearing debt	\$252,676,035.41	\$55,443,145.22	\$86,966,157.8.98 ⁷	\$16,328,450.00
<i>Revenues:</i>				
From taxes for all purposes	86,183,407.94 ⁸	16,213,267.73	15,466,933.56	22,551,834.04 ¹⁴
From taxes for city purposes	76,178,034.93	14,484,724.43	14,140,058.88	12,442,268.04 ¹⁵
From saloon or excise licenses	5,173,868.74	1,709,133.75	1,474,676.00 ⁹	3,547,910.66 ¹⁶
From water rates	2,220,988.90	3,073,246.37	1,983,488.78 ⁸	3,383,228.36
From miscellaneous sources	14,288,183.90	10,925,136.64	10,549,461.21	851,916.74
Gross receipts of city treasury ²	220,604,297.01	39,389,764.04	45,447,242.66	24,215,668.22
Receipts for city purposes	98,401,401.57	36,778,050.56	39,391,575.81	20,026,374.46
<i>Expenditures:</i>				
For street repairs	2,591,344.67	3,343,733.92	860,057.86 ^a	156,044.38
For street cleaning and garbage disposal .	5,031,282.27	961,209.00 ¹⁷	949,411.00	851,877.84 ¹⁷

AMERICAN MUNICIPAL PROGRESS

ITEMS OF COMPARISON	NEW YORK	PHILADELPHIA ¹	BOSTON ¹	CURACAO
Cost of same per mile of streets and alleys	\$2,006.17	\$643.38	\$1,939.35	\$205.14
Cost of same per capita of population	1.46	.74	1.05	.50
For sewers — repairs and cleaning	803,273.17	5,014,008.36	1,634,188.00	389,320.80 ¹⁸
For city lighting	3,819,683.75	1,398,589.36	678,915.35	906,669.96
Cost of same per mile of streets and alleys	1,523.97	936.14	1,386.82	210.33
For water supply — operation and maintenance	1,450,817.47	2,579,425.00	1,193,668.34	1,392,097.51
For parks	1,825,113.45	596,104.69	828,014.89 ¹⁹	12,235,5618
For bridges — repairs and maintenance	431,957.00	210,074.96	259,815.62	172,000.36
For schools	14,966,111.09	4,275,444.16	3,638,804.45	6,484,193.97
Cost of same per capita of school enrollment	37.13	29.00	40.16	25.95
Cost of same per capita of population	4.35	3.30	6.48	3.81
For police protection	11,999,503.44	2,957,974.75	1,688,716.43	3,383,583.86
Cost of same per square mile of territory	38,945.51	22,930.05	36,946.89	17,753.27
For fire protection	4,840,576.53	1,220,906.62	1,245,926.11	1,520,206.74
Cost of same per square mile of territory	15,770.87	7,914.01	28,975.02	8,028.16
For charitable institutions	3,114,905.50	728,646.73	1,166,250.50	6,345.00
For sanitation and health	1,955,515.00	251,838.08	145,920,7610	198,147.04
For department of buildings	546,525.00	49,420.00 ²¹	90,543,8911	60,134,52

APPENDIX II

ITEMS OF COMPARISON	NEW YORK	PHILADELPHIA ¹	BOSTON ^a	CHICAGO
For interest on city debt	\$14,117,775.25	\$2,143,294.41	\$2,881,076.70	\$639,493.00
Total cost of city government	98,100,413.00	29,061,393.50	39,322,734.14	19,153,797.97
Cost of city government per capita of population	28.54	22.46	70.07	11.27

¹ Reports of 1899.
² Includes balances.
³ Includes levy for county and state purposes.
⁴ Estimated at 1.85% on $\frac{1}{4}$ of personal values.
⁵ Not including \$358,661,514.95 "money at interest" reported to secretary of state.
⁶ Includes river and harbor dredging and repairs.
⁷ Includes \$3,533,000.00 of county debt.
⁸ To December 22d — nine days less than one year.
⁹ Includes \$204,560.90 for playgrounds.
¹⁰ Hospitals \$479,484.43 additional.
¹¹ Inspection only.
¹² Includes \$15,650,800.00 for all railroad property.
¹³ 1899 valuations. The 1900 valuations are but \$276,565,800.
¹⁴ Includes county, state, park boards, town, sanitary, etc., taxes.
¹⁵ Includes \$6,903,939.36 for schools, \$1003,830 for library, and \$1,149,102.67 for interest and sinking fund.
¹⁶ Includes all licenses.
¹⁷ Includes salaries of ward superintendents.
¹⁸ General park system maintained by special levy.
¹⁹ Includes cost of maintenance and operation of 9 pumping stations and Bridgeport locks.
²⁰ The rates on 1900 valuation are 7.99% to 9.25% for all purposes, 2.49% for corporate and 3.61% for schools.
²¹ Including schools, the rate is 3.627%.
^a Telegraphic reports, 1900.

APPENDIX III

(CHAPTER II)

TRACK ELEVATION IN CHICAGO

Ordinance passed	Date of completion of work	Width of right of way	Miles of track elevated	Actual subways constructed	Joint subways constructed	Street grade crossings diverted into subways	Street crossings discontinued	Estimated approximate cost of work done
May 23, 1892	1892-93	200	28.7	13			2	\$2,000,000
July 9, 1894	1894	100	9.0		7		4	375,000
July 9, 1894	1895-96	100	25.5		17			1,125,000
July 9, 1894	1897-99	100	34.77	9	6			1,500,000
Feb. 18, 1895	1895	100	18.29	7			2	400,000
March 30, 1896		100	15.78	27	5			1,000,000
Wis. Division								
March 30, 1896	1896-97	66	7.0	13			4	500,000
Milwaukee Div.	1896-97	66	4.85	8			3	400,000
July 27, 1896	1897-98	66	15.16	20			2	750,000
Jan. 18, 1897	1898-99	100	4.79	2				250,000
Jan. 18, 1897	1898-99	600	20.61	2				1,000,000
Jan. 18, 1897	1897	125	6.84		19			600,000
Jan. 18, 1897	1897	66	5.37		19			400,000
Jan. 18, 1897	1897	66	1.98	1				130,000
May 17, 1897	1898		19.77	10	1			2,000,000
Dec. 29, 1897	1898-99	100	29.8	25			2	1,200,000
Dec. 29, 1897	1898	30	2.14	3				100,000
Feb. 21, 1898	1898-99	100	10.72	31			9	2,040,000
Feb. 21, 1898	1898-99	30	1.0	3				130,000
Feb. 21, 1898	1898-99	100	2.0	2				230,000
Jan. 24, 1898	1898-99	80	9.46	18		II	II	500,000
Jan. 17, 1898	1898	100	4.43	7		6		300,000
April 6, 1898	1898-99	66	2.50	10				250,000
May 1, 1898	1899	100	9.35	2	I			225,000
May 1, 1898								
			289.81	213	75	17	39	\$17,405,000

APPENDIX IV

(CHAPTER V)

Investigations have been made by citizens in several cities to determine the exact relation of the school accommodation to the school population.

In *Philadelphia* the Association of School Directors reported in 1898 as follows : —

Number of pupils belonging	133,825
Number of sittings, based upon 45 to a classroom .	119,398
Number of class teachers	2,815
Number of pupils on half time	6,109
Number of pupils in double classrooms (2 teachers and their classes occupying one room)	1,895
Number of sittings in rented buildings, based upon 45 to a classroom (not included in second line of this statement)	8,235
Number of vacant sittings, based upon 45 to a class- room	3,295

The difference between 133,825 and 119,398 makes it plain that 14,427 children were and are being accommodated in ways other than the right way, namely : —

In rented buildings	8,235
On half time	6,109
Two classes in one room	1,895

The Federated Women's Clubs of *Chicago*, in February, 1897, made an investigation which was summed up as follows : —

Number of children between 6 and 14 years, in the city	247,707
Estimated in private schools	28,000
Number who should be in public schools	<u>219,707</u>

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Total number of sittings owned and rented	206,595
High school sittings occupied by those generally over 14 years	6,302
Ten per cent of the sittings, which it is estimated are occupied by those over 14 years outside of high schools .	<u>20,659</u>
Total occupied by those over 14 years .	<u>26,961</u>
Seats left for those between 6 and 14 years	179,634
Number <i>not</i> accommodated	40,073
Number in rented rooms	<u>13,194</u>
Total needing accommodation in public schools	<u>53,267</u>
Number of schools needed of 1,600 sit- tings each	34
Number of additional that will be needed in two years	19
Total	<u>53</u>

APPENDIX V

(CHAPTER V)

AN ACT TO PROVIDE FOR THE ORGANIZATION OF THE HYDE PARK HIGH SCHOOL AS A SCHOOL CITY

ARTICLE I

- (1) Whenever the pupils of the whole school, by a three-fourths vote of those voting, shall vote in favor of the form of organization provided for in this Act it shall be in force.
- (2) The details of the election for this purpose shall be under the direction of the Principal.

ARTICLE II

- (1) The chief executive officer of the School City shall be a Mayor, who shall be a regular member of the school and carry at least fifteen hours of work a week, with a standing of at least 75 per cent in each study, for at least two school months previous to his election; and if, for two consecutive months while in office, he shall fall below this standard, he shall thereby be disqualified from holding office longer and his successor shall be at once elected to fill out the unexpired term.
- (2) His term of office shall be five school months and until his successor is elected and qualified.
- (3) He shall have such powers and perform such duties in connection with the School City as pertain to the Mayor of Chicago in connection with the City of Chicago, except as hereinafter provided.

ARTICLE III

- (1) The City Council shall consist of the Mayor, two Aldermen from each classroom of the building, and two teachers elected from the Faculty.

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(2) Any regular member of the school who is carrying fifteen hours' work a week with an average standing of 75 per cent shall be eligible to the office of Alderman.

(3) The City Council shall sit with open doors, and shall publish an account of the proceedings of each meeting.

(4) The City Council shall have such powers and perform such duties in connection with the School City as pertain to the City Council of Chicago, except as hereinafter provided.

ARTICLE IV

(1) The City Judiciary shall consist of four elective members from the School City at large, and one from the teachers.

(2) The term of office of the Judges and the qualifications of the Student Judges shall be the same as those of Aldermen, and they shall serve until their successors have been elected and qualified.

(3) The Court shall have jurisdiction over all cases of violation of the laws and ordinances made in accordance with this instrument.

(4) The Court shall have power to summon any accused person before it, and any accused person shall have the privilege of appearing once before the Court to defend himself from charges.

(5) Any decision of the Judges may be determined by secret ballot if they so decide.

(6) The presence of four Judges shall be necessary for the adjudication of a case, and three concurring votes shall be necessary for a decision.

ARTICLE V

(1) The other elected officers of the School City shall be a Clerk, Attorney, and Treasurer.

(2) The qualifications of these officers shall be the same as the qualifications of Aldermen.

(3) Their term of office shall be the same as that of the Mayor.

(4) The powers and duties of the Clerk, Attorney, and

APPENDIX V

Treasurer shall be the same as the powers and duties of these officers in the City of Chicago except as hereinafter specified.

ARTICLE VI

(1) A general election for Mayor, Clerk, Attorney, Treasurer, and Judges shall be held during the first weeks of January and June, respectively.

(2) For the election of Aldermen each classroom in this building shall constitute a ward, and shall be entitled to two Aldermen.

Elections for Aldermen shall be held in their respective electorates, at their own convenience, on the first Monday or the first school day thereafter, of October, January, March, and June, respectively; at which times one Alderman shall be elected from each ward; and Aldermen so elected shall take office on the first of the next calendar month.

No pupil expecting to receive a diploma of graduation at the close of the current school year, shall be eligible for the office at the June election.

(3) At the March election, 1900, two Aldermen shall be elected from each room; the candidate receiving the greatest number of votes in each room, shall serve until November 1, 1900; the other until July 1, 1900. In case of a tie, the decision shall be by lot.

ARTICLE VII

(1) Inasmuch as the City of Chicago has a wider range of civic need than the School City can have, it is understood that the powers and duties of all officers are similar to those of the City of Chicago only so far as these powers and duties are appropriate to the needs of the School City.

(2) It shall, therefore, be the duty of the Mayor, during first week after his election, to appoint, subject to confirmation by a majority of the Council, a person to the position of Corporation Counsel. The qualifications and term of the office of this officer, if chosen from the student body, shall be the same as those of the Mayor and he shall hold no other office in the

AMERICAN MUNICIPAL PROGRESS

School City while acting as Corporation Counsel. His duty shall be, in the main, to give a written opinion, whenever asked by the Mayor or by the City Council, as to the legality and appropriateness of any official act.

(3) It shall be the duty of the Council first elected under the provisions of this instrument to provide by appropriate ordinances for the establishment, in the order named, and the maintenance of the following departments : —

- (a) A Department of Public Order.
- (b) A Department of Public Health.
- (c) A Department of Public Works.
- (d) A Fire Department.

(4) Inasmuch, also, as the Principal of the school is responsible to the Board of Education for the conduct of the school, it is expressly understood that all legislative, executive, and judicial acts performed in accordance with the provisions of this instrument are subject to the approval of the Principal.

ARTICLE VIII

The government of the Assembly Hall shall constitute a separate department with the following features : —

(1) An officer known as the First Assistant Chief of Police, shall be appointed by the Mayor, whose duties shall pertain exclusively to the Assembly Hall.

(2) Three tribunes for each period of the day shall be appointed and shall have immediate oversight of the Hall, each tribune taking charge of a particular section.

(3) The First Assistant Chief of Police, in conjunction with the Mayor, shall appoint the tribunes for the Assembly Hall.

(4) The First Assistant Chief shall have general oversight of the Hall and shall see that the tribunes properly perform their duties.

(5) It shall be the duty of the tribunes to see that the regulations hereafter enacted are observed and to report flagrant or repeated violations to the Court.

APPENDIX V

ARTICLE IX

(1) Each room may elect a committee of three to be known as the "Room Committee," who shall take charge of the room at all times when the class is assembled for other than recitation purposes; also to look after ventilation, sanitation, and such other matters as may be designated from time to time.

(2) The term of office of a member of the committee shall be six weeks except for those first elected.

(3) At the first election, one member of the committee shall be elected for six weeks, another for four weeks, and the third for two weeks. Thereafter, one member shall be elected every two weeks.

(4) The member of the committee serving the last weeks of his term shall be the chairman of the committee during those weeks, and shall have immediate charge of the room. In all important matters and in case of doubt, he shall act upon the advice and with the consent of the committee.

(5) In case of absence of the chairman, the member next in rank shall act as chairman.

(6) No member having served one full term as a member of the room committee shall be eligible for reelection during the current school term.

ARTICLE X

This instrument may be amended at any time by a three-fourths vote of all the members of the City Council, provided the amendment be ratified by a three-fourths vote of the instructors present at a regularly called teachers' meeting, by a majority vote of those voting when referred to the whole school, and is concurred in by the Principal.

APPENDIX VI

(CHAPTER V)

CHAPTER 489 OF THE LAWS OF 1899

*The People of the State of New York, represented in Senate
and Assembly do enact as follows:—*

SECTION 1. The state superintendent of public instruction is hereby authorized to furnish additional facilities for instruction in natural history, geography, and kindred subjects, by means of pictorial representation and lectures, to the free common schools of each city and village of the state that has, or may have, a superintendent of free common schools. The local school authorities may, in their discretion, cause the aforesaid illustrated lectures to be repeated to their artisans, mechanics and other citizens on the legal holidays and at other times. Any institution instructing a teachers' training class, or any union free school, may have the free use of the apparatus provided by this act upon the payment to the superintendent of schools loaning the same of necessary expenses incurred in such use or for any loss or injury to said property. Said superintendent may, from time to time, establish the rules and regulations and make and enter into the contracts necessary for carrying out the provisions of this act.

SECTION 2. The annual report of each school superintendent to the department of public instruction shall contain a full statement of the extent to which the instructions described may be given, and his judgment of the usefulness of the same.

SECTION 3. The sum of twenty thousand dollars is hereby appropriated, from any moneys not otherwise appropriated for the preparation for and the support and maintenance of said instruction for the year beginning on the first day of January, eighteen hundred and ninety-nine, payable by the treasurer

APPENDIX VI

upon the warrant of the comptroller, upon vouchers approved by the superintendent of public instruction and audited by the comptroller, and the sum of twenty thousand dollars shall be appropriated annually thereafter, in the general appropriation bill, for the preparation for and the support and maintenance of said instruction for the term of four years from the first day of January, eighteen hundred and ninety-nine.

SECTION 4. The state superintendent of public instruction is hereby authorized, under such rules and regulations as he may establish, to permit the slides for illustrative teaching prepared under the provisions of this act, to be sold to such educational institutions of this state as give free instruction to a portion of their pupils, and are, or may be, hereafter chartered by special acts of the legislature or organized under the general laws of this state.

SECTION 5. This act shall take effect immediately.

APPENDIX VII

(CHAPTER V)

Through the efforts of the late Senator Reilly on June 9, 1888, the following act became a law:—

An act to provide for lectures for workingmen and workingwomen.

SECTION 1. The Board of Education of the city of New York is hereby authorized and empowered to provide for the employment of competent lecturers to deliver lectures on the natural sciences and kindred subjects in the public schools of said city in the evenings, for the benefit of workingmen and workingwomen.

SECTION 2. The said Board of Education shall have power to purchase the books, stationery, charts, and other things necessary and expedient to successfully conduct said lectures, which it shall have power to direct.

SECTION 3. No admission fee shall be charged, and at least one school in each ward of said city, where practicable, shall be designated by said Board of Education, for the purpose of carrying out the provisions of this act, and at least three lectures shall be delivered in each school in each week, between the first day of October and the thirty-first day of March in each year (excepting the two weeks preceding and the week following the first day of January in each year), which shall be advertised in a daily newspaper published in said city, at least one week in advance of the delivery thereof.

SECTION 4. The Board of Estimate and Apportionment of the city of New York is hereby authorized, previous to the first day of September, in the year eighteen hundred and eighty-eight, to meet and provide the necessary appropriation for the purpose of carrying out the provisions of this act.

APPENDIX VIII

(CHAPTER V)

SUMMARY OF LAWS RELATING TO COMPULSORY EDUCATION AND CHILD LABOR IN THE UNITED STATES¹

(Issued by the Chicago Association of Collegiate Alumnae, February, 1901)

(Abridged)

COMPULSORY EDUCATION			CHILD LABOR
States.	Age.	Annual period.	Age under which specified employments are forbidden.
Illinois	7-14	16 weeks; 6 consecutive. Time to commence with beginning of first term of school year for pupils under 10 years of age, and not later than December 1 of said year for pupils over 10.	14 years, in any mercantile institution, store, office, laundry, manufacturing establishment, factory, workshop, or mine. Girls may not work in mines at any age. Certificate of age required under 16.
Alabama			10 years, in mines.
Alaska			21 years, in bar-rooms.
Arizona			
Arkansas			
California	8-14	Two-thirds of full term; 12 weeks consecutive.	14 years in mines. 10 years, in any factory, workshop, or mercantile establishment. Certificate of age required under 16.

¹ Report of the United States Commissioner of Education for 1897-98. Report of the United States Industrial Commission on Labor Legislation, 1900; Labor Laws of the United States, and Bulletins of the Department of Labor.

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COMPULSORY EDUCATION			CHILD LABOR
States.	Age.	Annual period.	Age under which specified employments are forbidden.
Michigan	8-14 ¹	16 weeks; 6 consecutive.	14 years, in manufacturing establishments. Certificate of age required under 16. (Law does not apply to canning or evaporating works.)
Minnesota	8-16	12 weeks; 6 consecutive.	14 years, in factories, workshops, or mines; 14 years, in mercantile establishments, telegraph, telephone, or public messenger companies, except during vacation of public schools; 16 years, in any occupation dangerous to life, limb, health, or morals.
Mississippi			Children under 21 (boys), under 18 (girls), may not be employed away from home without consent of legal guardian.
Missouri			14 years, in manufacturing or mechanical establishments, or where work would be dangerous to health of child.
Montana	8-14	12 weeks; 6 consecutive.	14 years, in mines.

¹ Same as Massachusetts.

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COMPULSORY EDUCATION			CHILD LABOR
States.	Age.	Annual period.	Age under which specified employments are forbidden.
Nebraska	8-14	12 weeks.	10 years, in manufacturing, mechanical, industrial, or mercantile establishments; under 12 years, not more than four months in the year in railroad shops, factories, shops, or mines. Certificate of age under 16 years.
Nevada	8-14	16 weeks; 8 consecutive.	
New Hampshire	8-16	12 weeks; 6 consecutive.	10 years, in any manufacturing establishment.
New Jersey	7-12	20 weeks; 8 consecutive.	14 years (girls), 12 years (boys), in factories, workshops, mines, or manufacturing establishments.
New Mexico	8-16	12 weeks.	
New York	8-16	Full term (October 1 to June 1) between ages of 8 and 12; 80 days between ages of 12 and 14; when unemployed between 14 and 16.	14 years, in factories, and in mercantile establishments in villages and cities over 3000 inhabitants. Certificate of age, school attendance, etc., required under 16.
North Carolina			Under 21, may not be employed out of state without consent of legal guardian.
North Dakota	8-14	12 weeks; 6 consecutive.	12 years, in mines, factories, and workshops (constitution of state).

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COMPULSORY EDUCATION			CHILD LABOR
States.	Age.	Annual period.	Age under which specified employments are forbidden.
Ohio	8-14	20 weeks; 10 consecutive, city; 16 weeks; 8 consecutive, other districts.	13 years, in factories, shops, mercantile, or other establishments; 15 years, in mines.
Oregon	8-14	12 consecutive weeks.	
Pennsylvania	8-16 ¹	Seventy per cent of the term.	13 years, in factories, manufacturing or mercantile industries, laundries, workshops, renovating works, or printing offices; 14 years in mines (boys); girls may not work in mines; 12 years, in bituminous mines. Certificate of age required under 16.
Rhode Island	7-15	80 days, and when unemployed.	12 years, in factories, manufacturing or mercantile establishments. Certificate of age required under 16.
South Dakota	8-14	12 weeks; 6 consecutive.	14 years, in mines.
Utah	8-14	20 weeks; 10 consecutive.	14 years, in mines (constitution of state); girls may not work in mines.
Vermont	8-14	20 weeks.	10 years, in manufacturing or mechanical establishments.
Washington	8-15 ²	12 weeks.	14 years, in mines (boys); girls may not work in mines.

¹ Not applicable to children over 13 regularly employed in useful service.

² 6 to 21, in case of defective children.

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COMPULSORY EDUCATION			CHILD LABOR
States.	Age.	Annual period.	Age under which specified employments are forbidden.
West Virginia	8-14	16 weeks.	12 years, in mines, factories, workshops, manufactories, or establishments where goods or wares are manufactured.
Wisconsin	7-13	12 weeks.	14 years in mines, factories, or workshops; 14 years, in mercantile establishments, laundries, or in telegraph, telephone, or public messenger service, except in vacation of public schools. Certificate of age required under 16. (But county judge, commissioner of labor, factory or assistant factory inspector may exempt any child over 12 from this act, where labor is necessary to support.)
Wyoming	6-21 ¹	12 weeks.	14 years, in mines (constitution of state). Girls may not work in mines.

¹ Penalty only for child 7-16, or one living idly and loitering about public places.

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APPENDIX IX

(CHAPTER VII)

THE SANITARY CONDITION OF THE PUBLIC SCHOOLS OF THE DISTRICT OF COLUMBIA

Fifty-one have good surroundings; 31 report objectionable surroundings, such as filthy yards adjoining or drainage from adjoining yards.

Eight buildings are reported as having no playgrounds, and for 14 they are too small, a most unfortunate condition of affairs in both instances. For 28 schools the playgrounds are of medium size, and in only 28 were they reported ample. Forty-seven of the playgrounds are reported as sunny and dry; and 17 as sunny, *not* dry.

Thirty-two buildings have a fire drill; 51 do not; 6 of the colored schools have fire drill once a week; 23 buildings having wooden stairs and halls have no fire drill. Eleven of the three-story buildings have no fire escape.

BASEMENTS

All but 4 of the 83 buildings are built with basements, and in 75 of these basements playrooms are provided for use in cold or stormy weather.

In 58 of the buildings the playrooms are reported as dry and sunny, properly floored and ventilated; 4 are reported as dark; 11 as sunny, but not dry. The playrooms in the Banneker are neither dry nor sunny, and are poorly ventilated. In 50 buildings the closets are also in the basements, and are often used as playrooms in cold weather, particularly when

APPENDIX IX

the Smead dry closet is the type used, as the stack fires partly heat the closets and the playrooms proper are unheated.

Four of the 83 buildings examined have the modern water-closets; 7 have the Mott automatic flushing tank; 31 have the long trough, flushed by the janitor and trapped at one end; 37 have the Smead dry closets, and 4 the Smead water-closet. The trough closets are very objectionable, being generally found rusty, ill smelling, and with a large amount of fouling surface impossible to be kept clean.

HEATING

Fifty-five of the buildings are heated by Smead furnaces, 23 by steam, and 5 by stoves.

In 133 of the 747 rooms reported the average temperature was higher than desired by the teachers.

CLEANING

The general rules for cleaning are to sweep and dust the entire building each day, to wash the halls and stairs and one playroom or school and cloak room each week. Windows must be cleaned three times a year.

CUBIC AIR SPACE

Forty of the 83 buildings fall below the standard of 250 cubic feet of air space for each pupil; 8 buildings are below the standard in all but one room; 10 are mostly below the standard; 10 are mostly above; and but 7 buildings are entirely above.

SCHOOL SEATS AND DESKS

In 295 rooms the seats were reported to be all of the same size; in 438 rooms, of different sizes, or adjustable.

LIGHTING OF SCHOOLROOMS

The number of windows in each room varies from 2 each, in a few cases in the Eastern and Central High schools, to 11 each in some rooms in the Jackson and Polk schools.

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In 27 cases the light was reported insufficient on cloudy days. In 3 cases "scarcely sufficient," and in 1 case "very poor." In all other cases the teachers either reported "sufficient light on bright and cloudy days," or failed to answer the question.

EYE TROUBLES

Trouble with children's eyes was reported in 28 cases, but in some of these teachers state they do not know the cause. In one case it was removed when curtains were applied, and in one case it was due to excessive light. In one case it was attributed to cross light, and in others faced blackboards between or near windows. In only 57 out of 747 rooms teachers report no blackboards between windows or on the same side with them.

CONTAGIOUS DISEASES

Forty of the 83 buildings reported one or more cases of contagious diseases last year, diphtheria or scarlet fever, or both, being in 32 buildings and measles in 10 of them. Of these 40 buildings, 28 were heated and ventilated by the Smead system, 9 by steam, and 3 by stoves. Twenty of these buildings have the Smead dry closets in the basements, 17 have the old trough, 2 are the Smead water-closets, and only 1 is an automatic flushing tank system. This seems to be additional argument for getting rid of the Smead dry closets.

DRINKING WATER

The water is generally drawn from sinks in the basement, being city water. Four schools report using wells; 10 are furnished with filters; 5 of the schools report their pupils as furnishing their own drinking cups. In 9 schools there are 5 to 25 pupils to each cup; in 17 schools, 25 to 50 to each cup; 24 schools, 50 to 100 to each cup; 13 schools, 100 to 200 to a cup; in the Colored High School there is 1 cup for each 225 pupils; and in Garnett, 250 pupils to a cup; and in the Mott school, 273 pupils to a cup.

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The problem of supplying water to a school in the most expeditious and cleanly way has been a troublesome one and much puzzled over by various interested people ; but it seems to have been at least partially solved in the new Peabody school, built this year, where a small drinking fountain has been placed in each cloak-room, and the committee could not help wondering why this was not done in all other buildings.

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(CHAPTER VII)

CHICAGO PUBLIC SCHOOL INVESTIGATION

1.
 - a. What open spaces are there attached to your school?
 - b. Are they adequate for play purposes?
 - c. If not, is there vacant ground adjacent?
 - d. Are you in favor of properly equipped and managed playgrounds as part of the educational system?
 - e. Have you school gardens for nature study?
 - f. Are you in favor of them?
2.
 - a. Have you a gymnasium in connection with your school?
 - b. Are you in favor of them for elementary schools?
3.
 - a. Have you a shower bath or bathing facilities at your school?
 - b. Are you in favor of them?
4.
 - a. Have you an assembly hall in connection with your school?
5.
 - a. Are you in favor of the establishment of a branch of the Public Library in your school?
 - b. Have you a school library?
6.
 - a. Have free lectures been held at your school?
 - b. If so, with what success?
 - c. Do you favor their continuance and extension?
 - d. Do you favor the public use of schools after school hours as social centres?
7.
 - a. Is there a parents' club in connection with your school?
 - b. Are you in favor of such organization?
8.
 - a. Have you a manual training department?
 - b. Do you favor manual training for boys and girls of all grades in the public schools?

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- c. Are you in favor of a course in domestic art for all pupils?
9.
 - a. Have vacation schools been established in connection with your school?
 - b. If so, with what success?
 - c. If you have not one, what demand is there for such a school in your community?
10.
 - a. What is the most urgent need in your school?

INVESTIGATION OF VENTILATION AND SANITATION

11.
 - a. Name of system of ventilation used.
 - b. When installed?
 - c. Is it in good order?
 - d. Is it satisfactory to the principal?
 - e. If not, why not?
 - f. State your own views about it?
 - g. How many rooms have you visited, and what was their condition, generally and particularly?
 - h. Are the rooms large or small, and what number of pupils in each?
 - i. What is your opinion as to the number of pupils any one teacher should have charge of?
 - j. Do teachers find it necessary to open windows?
 - k. Is it permitted or forbidden?
 - l. Have you personally investigated the means for getting fresh air into rooms, where patent ventilating machinery is used, so that you can report on that outside of what has been told you about it?

APPENDIX XI

(CHAPTER IX)

RULES AND REGULATIONS FOR THE GOVERNMENT OF THE PUBLIC NATATORIUMS OF THE CITY OF MILWAUKEE

RULE 1. The Natatorium will be open to the public for bathing from 6 o'clock A.M. to 12 o'clock M., and from 2 o'clock P.M. to 9 o'clock P.M., during the months of June, July, and August. During the remaining months of the year the opening hour will be 9 o'clock A.M.

RULE 2. The Natatorium will be closed from 12 o'clock noon on Sundays until the opening hour on the following Tuesday.

RULE 3. The use of the Natatorium on Wednesdays and Fridays will be reserved for females.

RULE 4. Boys attending school will be permitted to bathe from 4 to 6 o'clock P.M. during the school season, and during vacation every Thursday and Saturday forenoon. This rule will also apply to schoolgirls on the respective days reserved for females.

RULE 5. Bathers, unable to swim, before entering the basin, should ask the Superintendent or other person in charge, to instruct them in regard to the shallow water limits.

RULE 6. Bathers will not be allowed to occupy the basin or bath-rooms for a period exceeding thirty minutes each day, and after the numbers of their dressing rooms have been called by the gong, must dress and vacate same within fifteen minutes.

RULE 7. Persons having skin diseases or ulcerations must confine themselves to the use of shower baths only.

RULE 8. The use of soap in the basin is strictly forbidden.

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RULE 9. All persons should make use of the shower baths before entering the basin.

RULE 10. Gentlemanly behavior will be insisted upon at all times, and any misbehavior or violation of the rules will be punished by expulsion from the building.

RULE 11. Profane or boisterous language, hallooing, whistling, the use of tobacco, spitting in the basin or on the floors, writing on the walls, and unnecessary splashing of water is strictly forbidden.

RULE 12. Any injury or defacement of the property of the Natatorium will result in the arrest and legal prosecution of the offender.

RULE 13. No person will be permitted to enter the baths unless decently attired. Parties not in possession of bathing suits or towels can rent the same at the office.

RULE 14. Bathers must assume all risk of loss of property not deposited at the office.

RULE 15. Diving, or jumping from the galleries, tie rods, or trusses is strictly prohibited.



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¹ For the preparation of this index my obligations are due Miss Florence Ashcraft of the University of Chicago.

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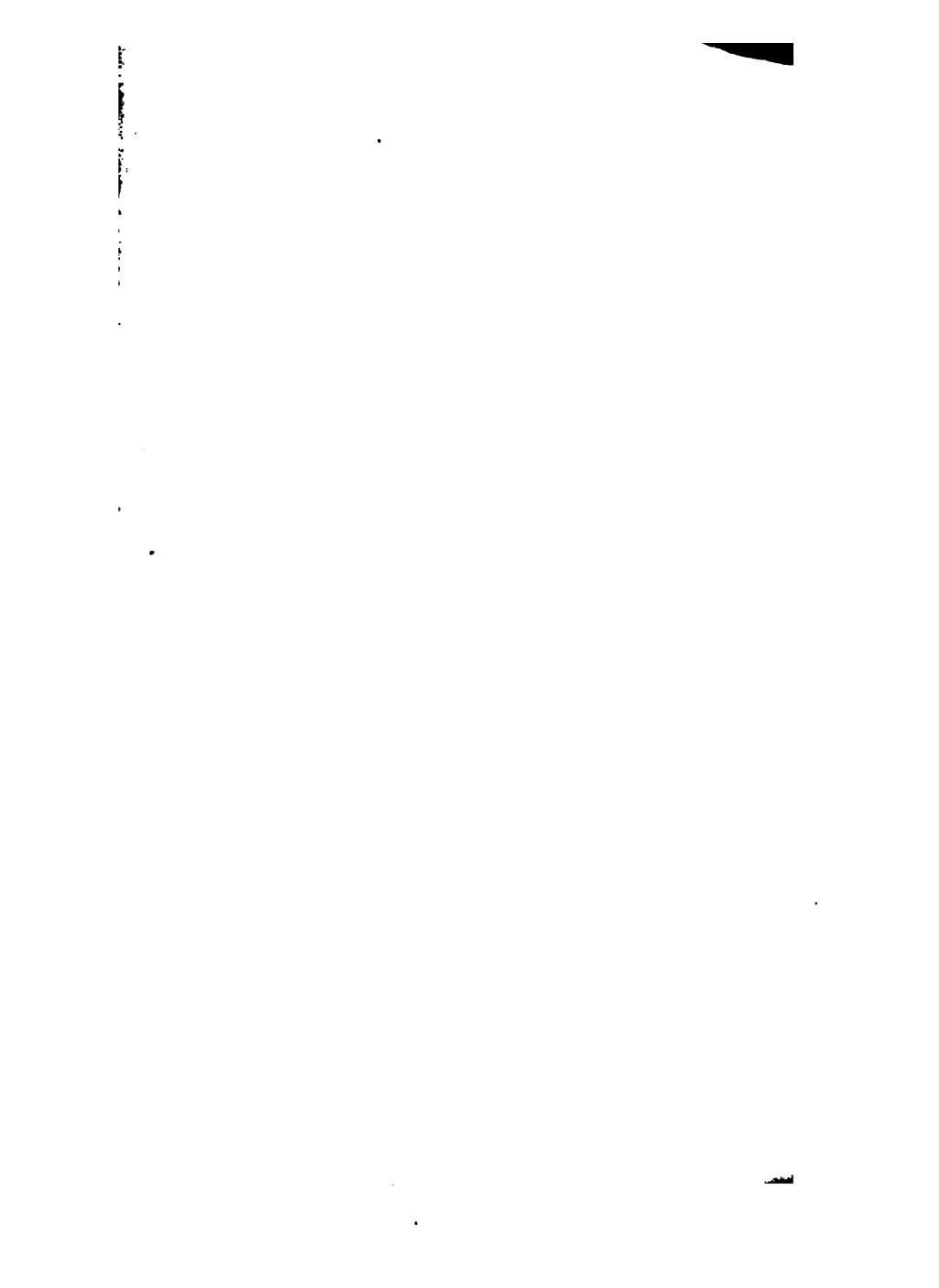
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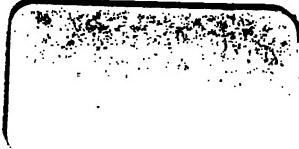
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